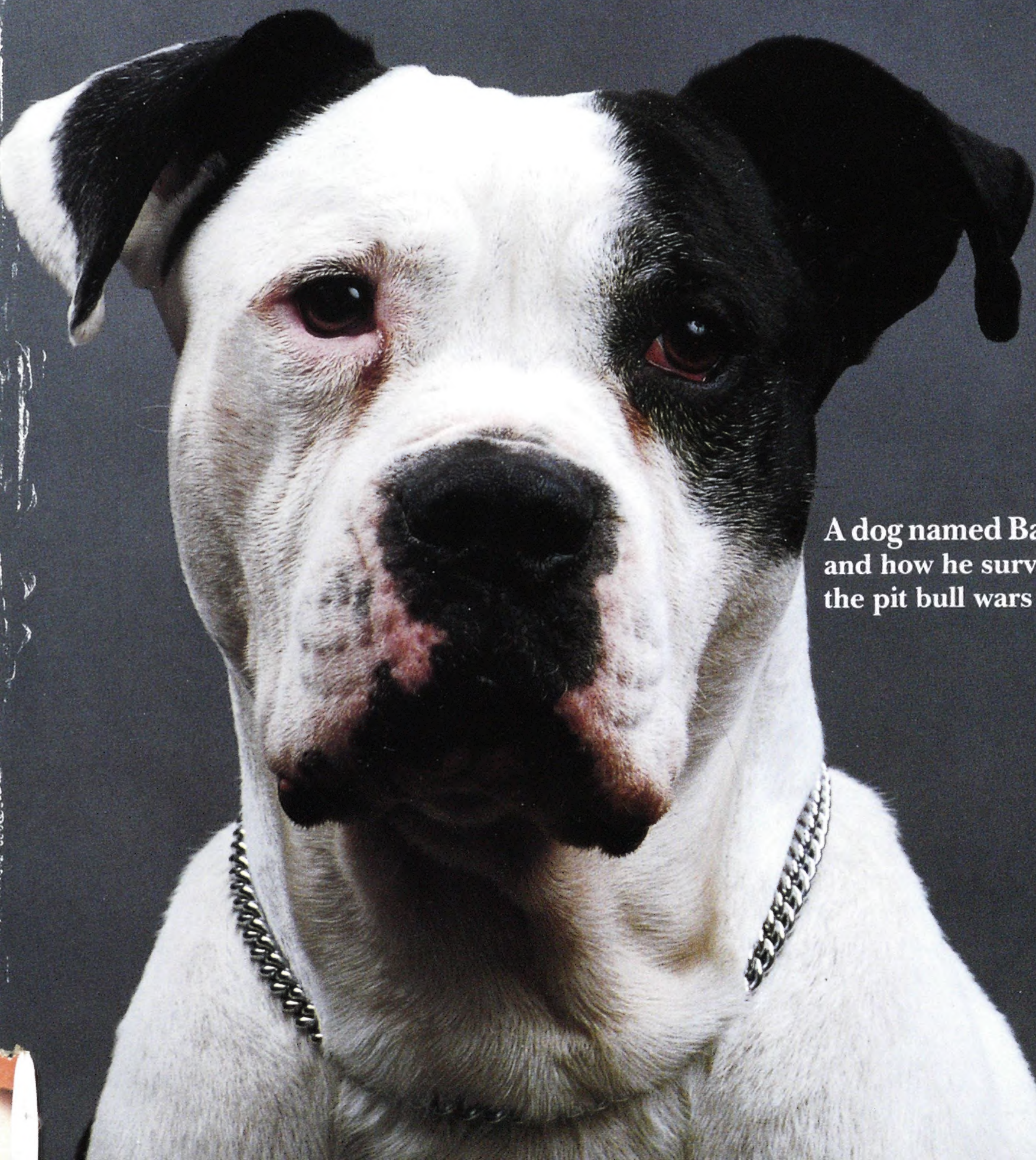
Smithsonian

April 1992



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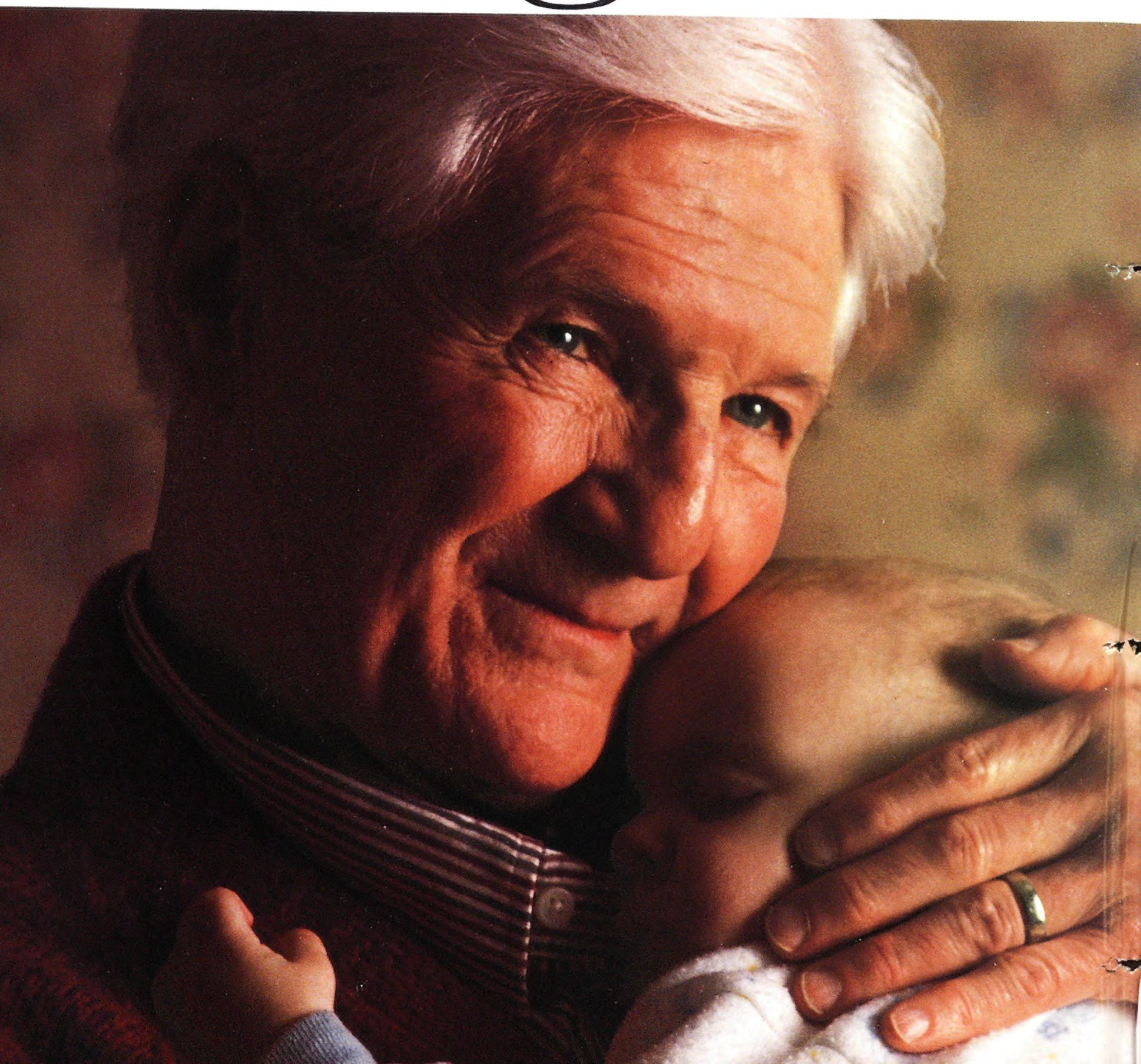

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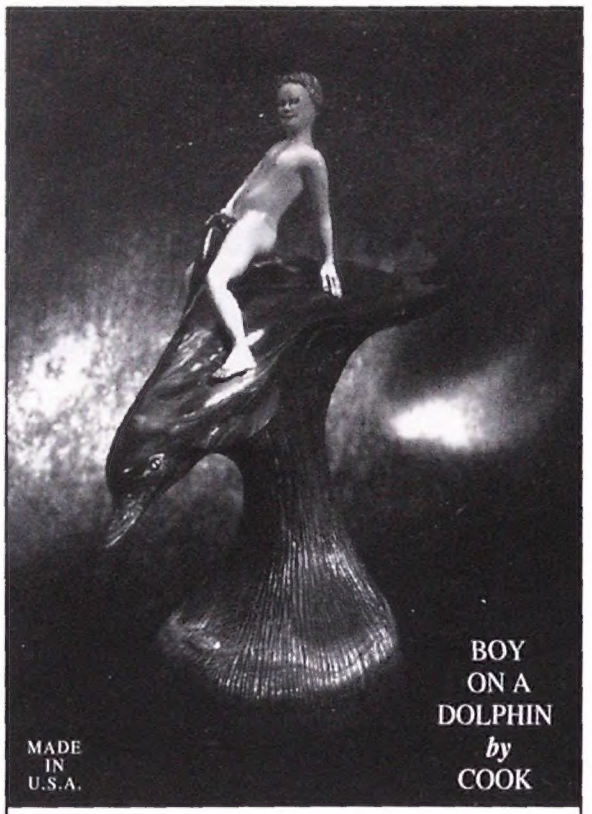

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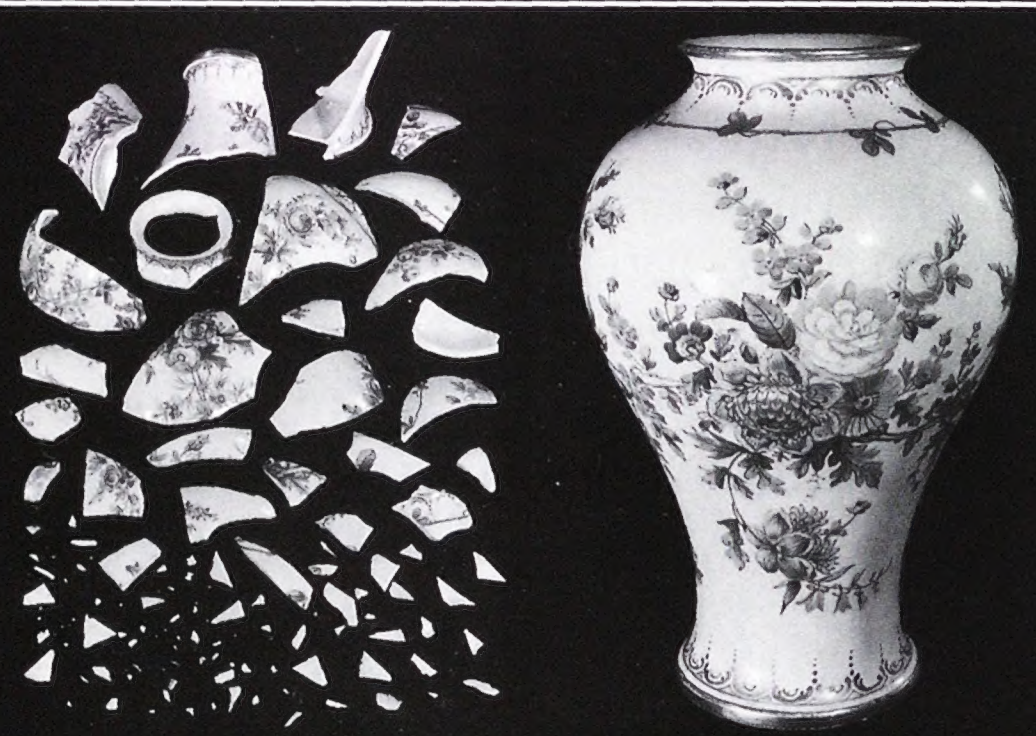

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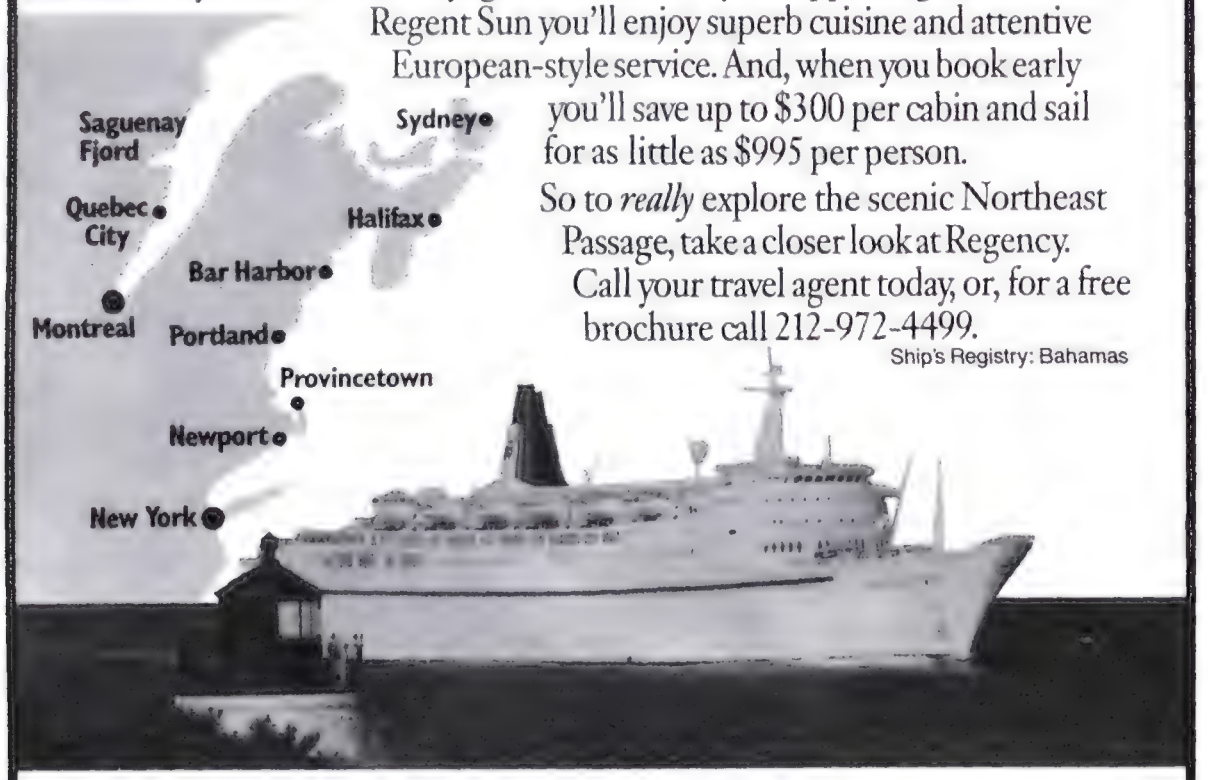

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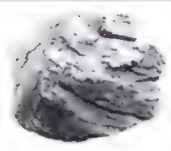

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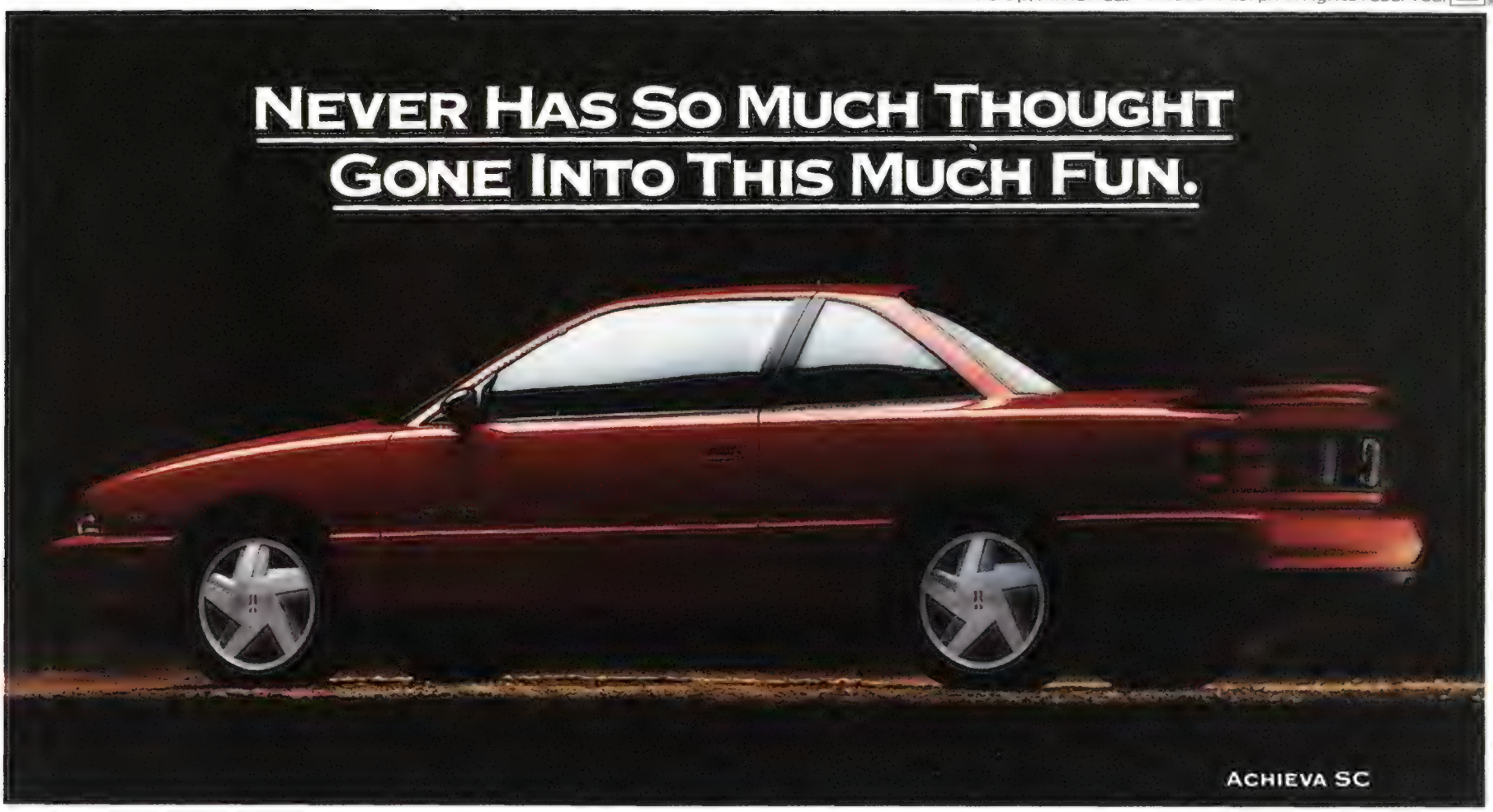

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Secretary Adams' comments

Smithsonian horizons

The central challenge for museums today may be to find ways to address the increasing diversity of our society

A perennial challenge facing the Smithsonian is how it can effectively represent and communicate the present state of knowledge within the huge and contentious domain of American and world culture. Disturbing political and social crosscurrents in the society at large nowadays heighten the risk of slipping, or at least being perceived to slip, into positions of partisanship that many feel are inconsistent with the broadly central and unifying role that the Smithsonian should play.

There is, of course, no easy litmus test for distinguishing positions that are grounded in sound scholarship from those that are more strictly ideological. The academic disciplines concerned, essentially the social sciences, the arts and the humanities, are themselves increasingly fragmented. Strongly stated points of view cannot be automatically excluded on the grounds that they are "partisan." As no less an authority than Charles Darwin once observed, "How odd it is that anyone should not see that all observation must be for or against some view if it is to be of any service."

We need to remember that all science has to be revisionist if it is to be science at all. So it is with scholarship in the human sciences as well. The major achievements of recent generations have mostly been associated with frankly revisionist positions. Dinesh D'Sousa of the American Enterprise Institute has suggested that "it is the pursuit of truth itself that the modern critics spurn. . . ." But a more accurate, as well as more complex, assessment has recently been offered by the Rockefeller Foundation's Kenneth Prewitt: "Today we speak of the 'uncertain connection' between knowledge and policy; of the 'social construction of theory itself'; of the elusive nature of what, in fact, is a fact; of the unintended consequences of purposive social action; of the way in which social problem solving only generates new conditions that establish other problems; of the persistence of 'irrationality' in behavior and social structure; of the political uses of statistics and measurement; of the role in social life of values, emotions, fantasies, and images."

Yet at the same time, even if absolute truth usually remains elusive, the Smithsonian certainly has a responsibility to associate itself with the search for truth, with a positive valuation for objectivity and detachment, and with a repugnance for gross, demonstrable error.

How can we translate these quite general observations into useful principles, and into a mode of day-to-day operations that will overcome most misunderstandings and assure the continuing support of the Smithsonian's public? My tentative answer is that a readiness to encourage and respond to diversity is the key. We can and must continue to seek wider audiences, taking a frankly tolerant and experimental approach to traditional standards and canons as we do so, and at the same time continue to respect and embody those traditions in much of what we present to the public.

Ours is a heavy responsibility for the national collections—whether in study, in storage or on exhibition. Those collections embody and speak for the past, not only in the millions of individual elements they contain but in the systems of knowledge that have been erected around them over the course of generations. At some admitted risk of never quite managing to keep up with all the latest cutting edges, the stream of museum scholarship must carry, and to some extent be constrained by, that weight of tradition.

But there is also an opposing consideration, always to be balanced against the constraining hand of tradition. This is a time of incredibly rapid change in the world. Much of that change is positive, reaching out to new horizons of human potential, basic freedoms of association and expression, scientific knowledge and intercultural understanding. But much also is deeply marred by economic uncertainties, by grave social fragmentation, and by a sense that there are approaching, ominously interacting, crises in many aspects of our lives.

The Smithsonian is one of this country's great, unifying institutions. It cannot isolate itself within its monumental buildings along the National Mall, merely contenting itself with the audiences, constituencies and disciplinary approaches it already serves and waiting for the storm of change to subside. Given the severity of the challenges this country faces, it would be irresponsible for a public institution like this one to allow itself to become a bastion of exclusivity.

As a perceptive editorial in the *Washington Post* stated: "Letting visitors in on controversies can help defuse their hurtfulness while increasing the museum's appeal. This, more than the subject matter, is the biggest change from the way museums have traditionally been viewed: not as flat statements of confirmed fact but as places where the enterprise of codifying science and culture continues."

This is a constructive suggestion. Why not let our audiences in on the controversies and uncertainties of science and scholarship? Why not recognize that

there really is no such thing as complete neutrality with regard to either facts or values? And yet at the same time, let us by all means avoid parading the finality of our present knowledge, and still less our certainty as to the superiority of our own moral positions.

This shift in stance is one that was already presciently identified 20 years ago by the Washington lawyer Duncan Cameron. It involves no longer thinking of museums as establishments whose timeless, unquestioned authority can be likened to that of temples, and associating them instead with a status much closer to that of the Roman forums—places "for confrontation, experimentation, and debate."

Frankly, it cannot be credibly denied that there are many valid realms of meaning to be sought in museum collections and exhibitions, beyond those that academically specialized museum staffs have been trained to recognize. Relevant knowledge is both more widely dispersed and more problematic in character than most of us with positions of either scholarly or administrative authority will often find it comfortable to admit.

How far can (or should) we peel away the blandly celebratory, outer skins of the onion in our exhibits? How far should we strive merely to balance different viewpoints, as distinguished from offering a clear, forceful statement of a single point of view? These are not easy questions to answer, nor is there necessarily any prize for consistency. But they are the right questions, directed toward clarifying our responsibilities with respect to broad, diverse audiences.

Museums have a special relationship with society, distinguishing them from most other institutions, like colleges and universities, that are also devoted to the "increase and diffusion of knowledge." Museum doors are open to all, without concern for age or educational credentials. They involve a larger investment of the parent institution's—usually also the public's—resources than do articles in scholarly journals. While museums must be no less zealous than universities in protecting the rights of free expression of their staffs, the contents of at least major exhibitions need to be recognized not merely as the private statements of their designers but also as institutional statements.

Reflecting the scholarly trends in the universities from which they are recruited, museum curators' own training and outlook are leading to a prevailing view of objects or collections not as isolates or expressions of disembodied styles, but as parts of a range of supporting sources for synthetic, interdisciplinary study. Yet in museum exhibitions, those same objects and collections may be viewed by enormous numbers of visitors from different perspectives—for example, as subjects of patriotic, religious or artistic veneration, or as validations of ethnic identity.

It is a position that I have personally reached only with numerous qualifications and reversals along the way, but now hold with considerable conviction, that perhaps the central challenge before museums today is to find ways to address themselves to the increasing diversity, and at the same time the growing interdependence and vulnerability, of social life everywhere. Museums need to see themselves, increasingly, and to be publicly recognized, as important institutional means by which every group in our very pluralistic society can define itself and represent its place within the complex, dynamic circumstances of contemporary life.

The general direction of the response that I think is best suited to the difficult set of choices posed by the foregoing considerations is to encourage openness and diversity across the Smithsonian at large, rather than a rigid set of policy constraints. Issues and sensitivities today have become simply too crosscutting and complex to be regularly anticipated. Museums will fail to meet their responsibility to pioneer in presenting new and diverse visions and challenges if they are unprepared to risk occasional criticism and controversy. I believe the public can be counted upon to recognize and respect the need for flexibility and diversity rather than some all-prevailing standard of uniformity. But at the same time, it becomes all the more important to work for the cumulative balance of the Smithsonian's public offerings, and for assuring that, as an aggregate, they convey a tone of breadth of interest, tolerance for diversity, and scholarly responsibility and objectivity.

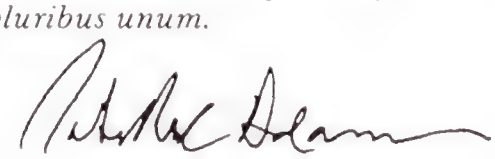
As a further step, museums can and should move beyond their prevailing stance of authoritative anonymity in exhibitions. Where contentious views are important to an exhibition, they should be put forward. The public is entitled, however, to have their controversial nature made plain, and to have them attributed to the particular scholar or curator responsible for them. The place to strive for balance is not in the neutrality of a particular exhibit but in the full range of a museum's public offerings.

In short, we need to develop, as a general policy, better ways to make clear when controversial views are expressed in our exhibits, whose views they are, and how representative and reliable we think they may be. In an age of change and dissent, museums can no longer rely on bland and impersonal labels that claim for every view the authority of the Institution itself.

At the root of my own view is a conviction that public institutions cannot immure themselves within monumental buildings and fail to take notice of their potential relevance for issues facing the country at large. Museums are, in the last analysis, our major repositories of highly charged cultural symbols. No less influential a critic of current trends toward pluralism and disharmony than Arthur M. Schlesinger jr. has written, "ethnic and racial diversity is more than ever a salient fact of the age." How can institutions like museums, in which culture and politics obviously intersect (if not collide!), avoid dealing with a subject that is central to the question of communicating more effectively with their audiences?

It should be emphasized that this enterprise could not fulfill its mission if it were completely centralized. Both in the research we conduct and in the Smithsonian's public programming, the primary initiative must generally rest in the hands of those on the immediate firing line. Museum curators and directors, in particular, actively engage their own specialized knowledge every day in imparting an understanding of their often vast and always complex collections to a huge and diverse public.

After all, museums can—and the Smithsonian must—play a unique and increasingly vital part in learning about and finding ways to communicate and represent the pluralism that has always deeply characterized the United States, in addition to the increasingly multifaceted and problematical character of cultural knowledge itself. Yet in both efforts, ours is also a responsibility to hold high the corresponding vision of *E pluribus unum.*



Mrs. Morse's Students Learn That Math Really Is For The Birds.

With Sallie Morse as their guide, these seventh graders at Cool Springs Middle School in Forest City, North Carolina are exploring the wonders of nature through the lessons of math.

"The first thing my students learn is that the word 'math' is a verb," Sallie explains. "They *participate* in math."

Part of that participation centers around the study of birds. With a bird feeder hanging outside her classroom window, Sallie has devised a range of activities that teach and reinforce the students' math skills.

Using scales, the students experiment with ratios and proportions to formulate different seed mixes. They record information on the number of visitors to the feeder and their food preferences, using graphs to chart results. Finally, they compare temperature, humidity, and activity variables to make observations about the birds' feeding behavior.

"My students enjoy math," Sallie says. "They speak it, calculate it and use it to expand their knowledge of the world. They participate in it and understand it. And thus, they love it."

State Farm is honored to present Sallie Morse with our Good Neighbor Award. We are also delighted to make a contribution of $5,000 to Cool Springs Middle School in her name.

Sallie Morse. Through innovative math techniques, she opens up new worlds for her students.

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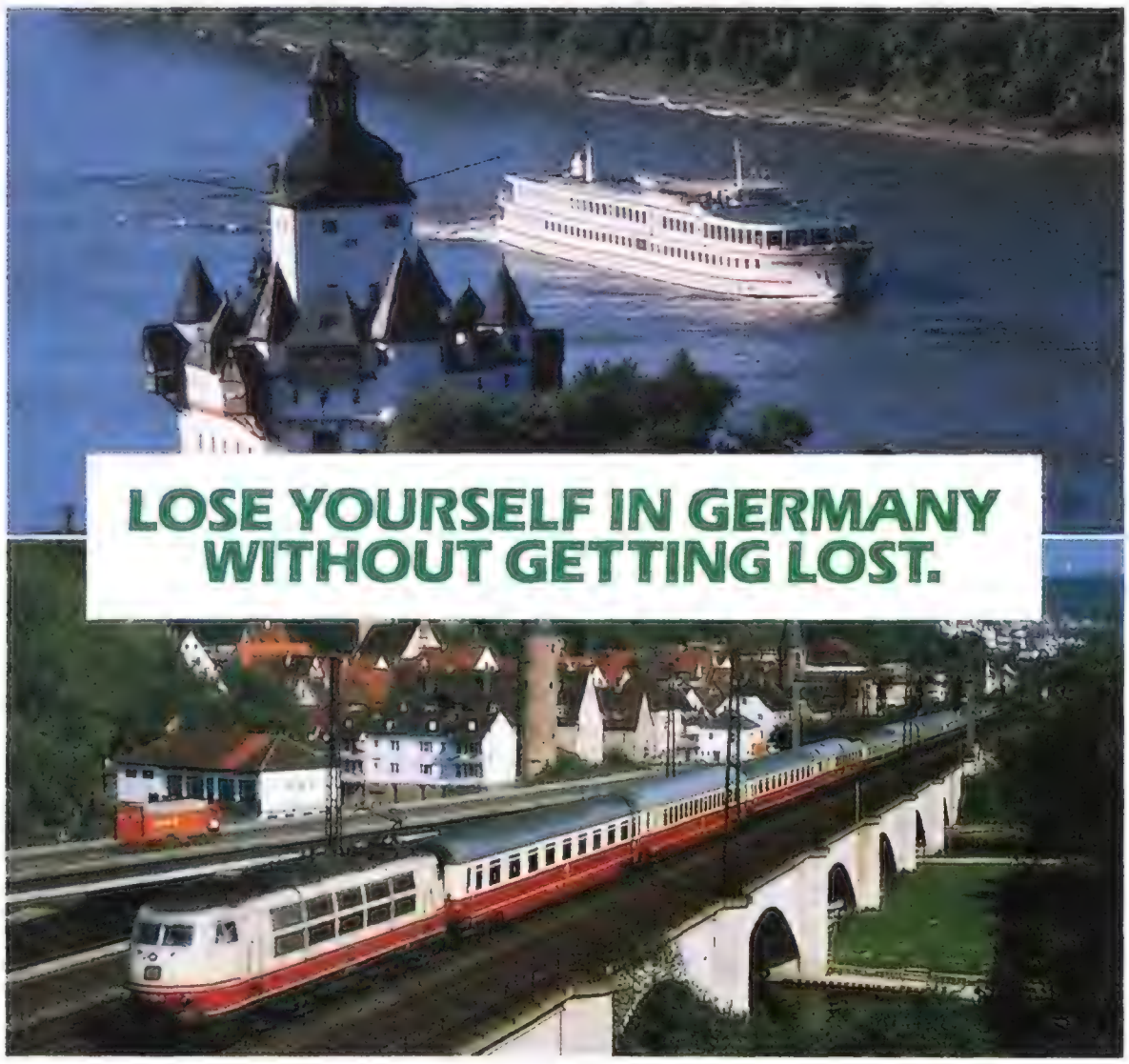

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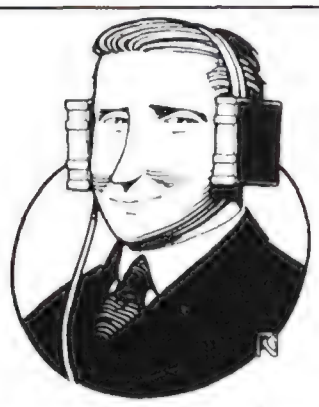

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Letters to the Editor

Gray Ranch

Dear Sir: Your February issue makes it clear that Gray Ranch is a fine property. If the Nature Conservancy can manage it for the next 100 years as well as the cattlemen have for the past 100, they will have done a remarkable job.
Alto Adams jr.
Fort Pierce, Florida

Dear Sir: Congratulations to the Nature Conservancy for snatching Gray Ranch. But your article failed to mention Hidalgo County's other important claim to fame. It was to Lordsburg that John Wayne, Claire Trevor, Thomas Mitchell, Andy Devine et al. were going in that peerless 1939 film classic, *Stagecoach.*
Sue Avery
Franklin, New York

Object at hand

Dear Sir: Harriet Hosmer earned a reputation for her adventurous spirit and for her considerable artistic achievements, as told in Dolly Sherwood's new biography, *Harriet Hosmer, American Sculptor, 1830-1908.* Determined to see works by Donatello, Orcagna and San Gallo in the Certosa Convent—off-limits to women—she arrayed herself in some of Robert Browning's clothing and went throughout the museum "without exciting the least suspicion . . . ushered into the cells of the monks where either the occupants or I should have been relieved of our heads" had the deception been discovered.

With the same zealous independence she defended herself against society's expectations of women when, with Shakespearean actress Charlotte Cush-

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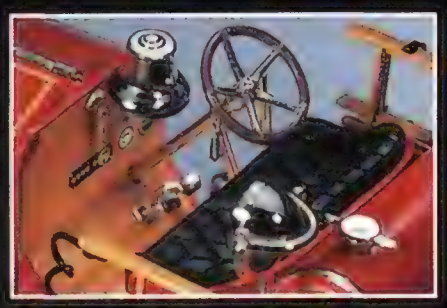
1922 Ahrens-Fox R-K-4 Pumper.

Shown smaller than actual size.
Pumper: 8⅜" L. Scale 1:32. Base: 9¾" L.

1922 AHRENS-FOX R-K-4



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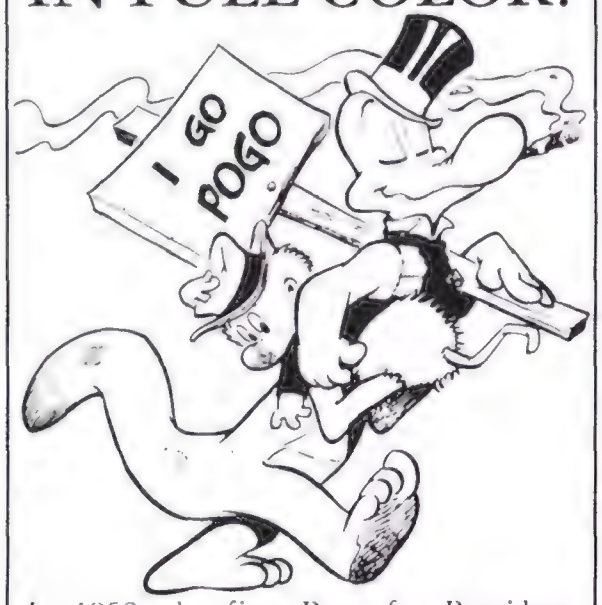

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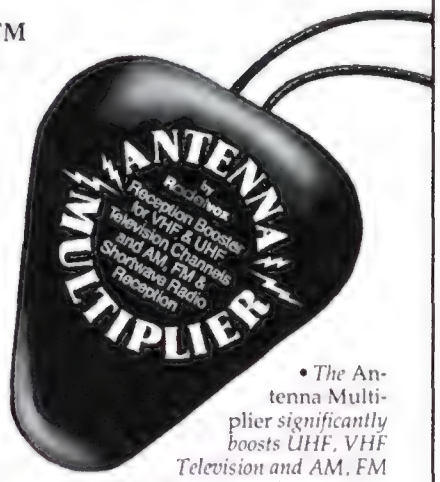
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man, she was accosted one night by a man who slyly asked why they were walking the streets of Rome at 10 P.M. Whirling to face him, she replied, "You ask my reason for walking so late. *This* is my reason," thwacking him across his face with her iron-tipped umbrella.
Kathryn Conrad
Columbia, Missouri

Dear Sir: Your article did not mention Harriet Hosmer's most ambitious, but never executed, sculptural effort. The "Freedmen's Memorial for Abraham Lincoln" was a far cry from the sentimental and famous *Puck* of her youth.

As told in 1916 by an early black art historian, Freeman Henry Morris Murray, in *Emancipation and the Freed in American Sculpture*: "Shortly after the Civil War closed, an unofficial and voluntary organization undertook to erect in Washington City [the] elaborate and imposing [memorial]." Black citizens were asked to contribute to the estimated cost of $250,000. The commission was awarded to Harriet Hosmer because her design gave distinct and conspicuous recognition to the freedmen's services in helping to secure their own freedom and in defending the Union.

Her 60-foot monumental design included an elevated statue of Lincoln set in a small, columned temple. Below it, four figures of Liberty reached out to four sculptures of blacks representing stages on the way to liberation: for sale; plantation labor; assisting Union troops; as Union soldiers.
Sidney Kaplan
Amherst, Massachusetts

Telephones

Dear Sir: In 1918, when we wanted to make a local call, we cranked for the operator and asked for the wanted party by name.

In 1950, when I was building corn storage for the government in Illinois, I had rented a house in Ellsworth, a village of some 200 people. My home was on a short block and across the street from the telephone office—located in the living room of the owner of the phone company. The operator could look out the window and see my driveway. I received many person-to-person calls from New York and Washington. If my car was not in the driveway, the operator would say, "Mr. Crow is not home, I can't see his car."
Wallis H. Crow
Sonora, California

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Dear Sir: Regarding phones in the pocket, I can see it now: "Hey, Joe, I'm calling from the middle of the lake on my pocket phone and—oh! hold on—my other pocket is ringing!"
Paul J. Meketa
Sunnyvale, California

Mountain lions

Dear Sir: In 1986, when deer hunting in the Big Horn Mountains of Wyoming, we encountered a female cougar with two spotted cubs.

My brother and nephew, unarmed, had gone in to retrieve a deer that they had dressed and left in the woods overnight. When the cubs charged down the hill at them, the hunters were amused, but then a highly agitated adult cat came racing toward them. With a close-in stare-down, the hunters quietly backed away from the unflinching mountain lion.

Next day, hunting with a camera and trying to move a deer for my son, I came upon the female cougar. Somewhat agitated, she moved about for several minutes, observing me. I took several pictures, and then she began walking toward me. I backpedaled, but the cat kept coming. I yelled for help, and my son fired a shot in the air. With the cougar only a few feet away, I reached to the ground, picked up a heavy stick and threw it hard at her head, yelling at her. It worked, and I have been able to celebrate several birthdays since.
Kenneth Engelmann
Rochester Hills, Michigan

Dear Sir: I wish our outrage over the fact that, in the past 100 years, 11 people have died from mountain lion attacks were channeled toward the unthinkable statistic of 23,000 humans murdered in 1990 by other humans—allegedly not natural predators, as is the mountain lion, which kills to survive.
Mary J. Repar
Stevenson, Washington

Dear Sir: Here in the East, particularly in central Pennsylvania, the Nittany lion has never left. Any Penn State grad or undergrad will testify to that—it's their mascot!
Mark P. Zaitsoff
Pittsburgh

Dear Sir: Your article brought to mind my father's story of an encounter at the turn of the century. When a boy, he

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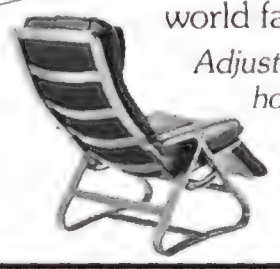

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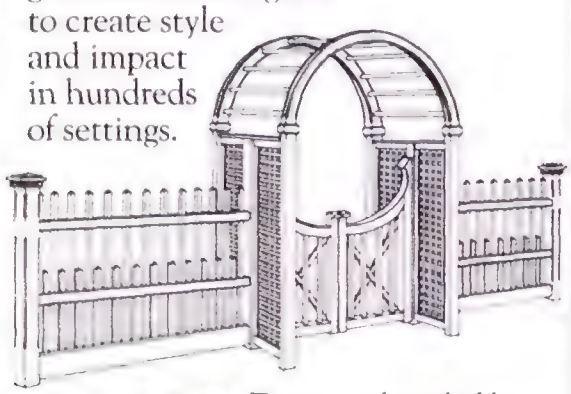

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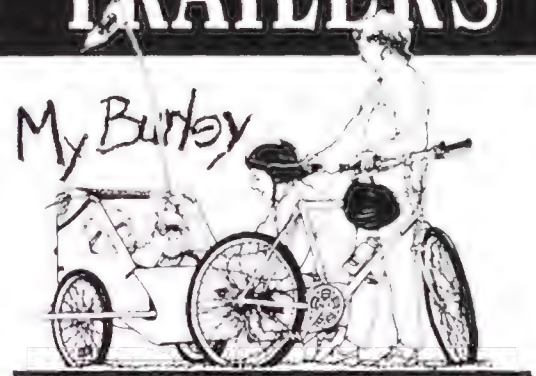

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helped supplement his family's income by working for farmers during harvest. Headed home one midsummer's night, he was followed by a lynx for about three miles. It did not attack or attempt to close distance. When Father reached his mother's yard, he ran as fast as he could, losing his cherished plaid pancake hat. It was found 15 miles away in a sheep pasture, where a sheep had been eaten. But the hat did not have even a small tear.
Monna L. Clemons
Eau Claire, Wisconsin

Dear Sir: Reading that bending over or squatting while in lion country may invite an attack caused me a bit of a scare this morning. Recent snows and thawing action have made arrowhead hunting attractive. So I walked to a location that frequently produces them.

I did spot a nice point, and I did bend over to pick it up. A large black-tailed jackrabbit chose that moment to leave the vicinity. Don't let anyone tell you that what the eye sees has to be processed by the brain. *My eyes said LION!* And my feet agreed. Without consulting the brain, eyes and feet left the area and ran step-for-step with *Lepus californicus* until the brain engaged.
David M. Seymour
Silver City, New Mexico

Scrapbooks

Dear Sir: My Grandmother Burdiss kept three scrapbooks during World War II. For years after inheriting them I occasionally looked at old photos of my uncles in Army and Navy uniforms, marveled over their letters or wept at newspaper clippings relating the deaths of young relatives or local service people.

Then, last year, in one of my husband's Disabled American Veterans magazines, the curator of the Dwight D. Eisenhower Library asked for memorabilia from the war years. I wrote him about Grandmother's scrapbooks and received a reply asking me to send what I felt I could. Packing with care the "V mail," photographs, cards, letters and other information I thought might be useful, I sent it to Abilene, Kansas. Came a reply telling me my contribution will be seen by historians and many others, and will add to the knowledge of those years.

It is gratifying that Grandmother's hard work in lovingly cutting and pasting will not end up in some trash can.
Sandra Tucker-Maxwell
Roanoke, Virginia

Victor Renaud

Dear Sir: As an old botanist and horticulturist, I call to your attention a common misconception that we purists in the business stumble over all too often.

The Egyptian onion bulblets pointed out in your caption on page 72 are not "fruit," nor are those underground. Fruit results from the reproductive, i.e. flowering, parts of the plant. Any other edible part of a plant is vegetable.

This means that the edible portion of sweet corn and tomatoes, not to mention beans, peppers and all gourds, is fruit. Potatoes, onions, celery and radishes are among the true vegetables.
Howard W. Brody
Palm Harbor, Florida

Next to Brzezinski . . .

Dear Sir: I sympathize with Mr. Chelminski. People find an amazing variety of ways to misspell and mispronounce my simple name, Tiiu Kera, which is so prevalent in Estonia that there are folksongs about girls named Tiiu. Even when I type it, respondents insist on using two *u*'s instead of two *i*'s. Even my surname is "corrected" to Kern or Kev.

My mother considered naming me Tiina. Thank goodness she didn't. It would inevitably have become Tuna!
Tiiu Kera
Washington, D.C.

Dear Sir: My friend Nick Jimenez, associate editor of our local newspaper, received a letter from his university alumni association addressed to "Mr. Nicky Menace."
Margaret Wead
Corpus Christi, Texas

Dear Sir: Having a rather difficult Polish name, I sometimes call myself John K. Once, a meticulous saleswoman, writing out the sales slip for a cash purchase, asked for my name. To save time, I simply said, "John K." She then asked: "K-a-y or K-a-y-e?" I replied, "It's just John with a capital *K*. Haven't you heard of Malcolm X? Well, I'm John K!"
John T. Kazmierski
Edgewater, New Jersey

Dear Sir: An articulation problem is not unique to Slavic names. My maiden name, Blocksidge, was a source of frustration in that teachers, friends, acquaintances, and so on, never got it right.

I married at 19 and became Bernice B. Wells. My only sister married a fellow named Bell. While each of our men had many endearing qualities, the simple names were a major attraction.
Bernice B. Wells
Cave City, Arkansas

Dear Sir: Mr. Chelminski may go through life spelling his name slowly, but he should appreciate what he has. I bet he never had three people stand up when they called his name in the doctor's office. I am sure he was never awakened by a hotel operator at 3 A.M. and forced to growl, "Sorry, wrong Chelminski." Finally, he should understand one of life's cruel twists: a person with an easy name usually lives on a street no one knows how to spell.
Steven L. Jones
Glastonbury, Connecticut

Dear Sir: An account in our family's wrapping-paper distributorship in the late '30s, a mom-and-pop butcher and grocer's, was on the books as Szymanski.

Nobody had tutored me on pronouncing the proprietor's name, so when I visited the store to solicit orders I called him "Mr. Sumanski." One day a customer came in and said, "Hey, Schminesky, last night's pork chops were tough!" When she left, I inquired if "Schminesky" was the correct pronunciation. He nodded and said it really didn't make any difference.

Nevertheless, I told him that in the future I would pronounce his name correctly, to which he replied, "Well, if we're going to be truthful, my name isn't 'Schminesky,' either—that was the name of the fellow I bought the store from." Since his correct name, and its spelling and pronunciation would be even more incomprehensible to a native-born American, he'd be just as happy to continue as Mr. Sumanski!
Jerome D. Miller
Key West

Dear Sir: Next to Cherkezian, *Chelminski*'s a cinch! I thought he was writing about me. While he became "Chet," I became "Chick"—in high school basketball, that Armenian name on my jersey was crushed into one my teammates could cope with. Through the years I, too, thought that three crisp syllables—CHER-KEZ-IAN—was manageable. But having both a *k* and a *z* became, and still is, a great stumbling block.
Nazaret Cherkezian
McLean, Virginia

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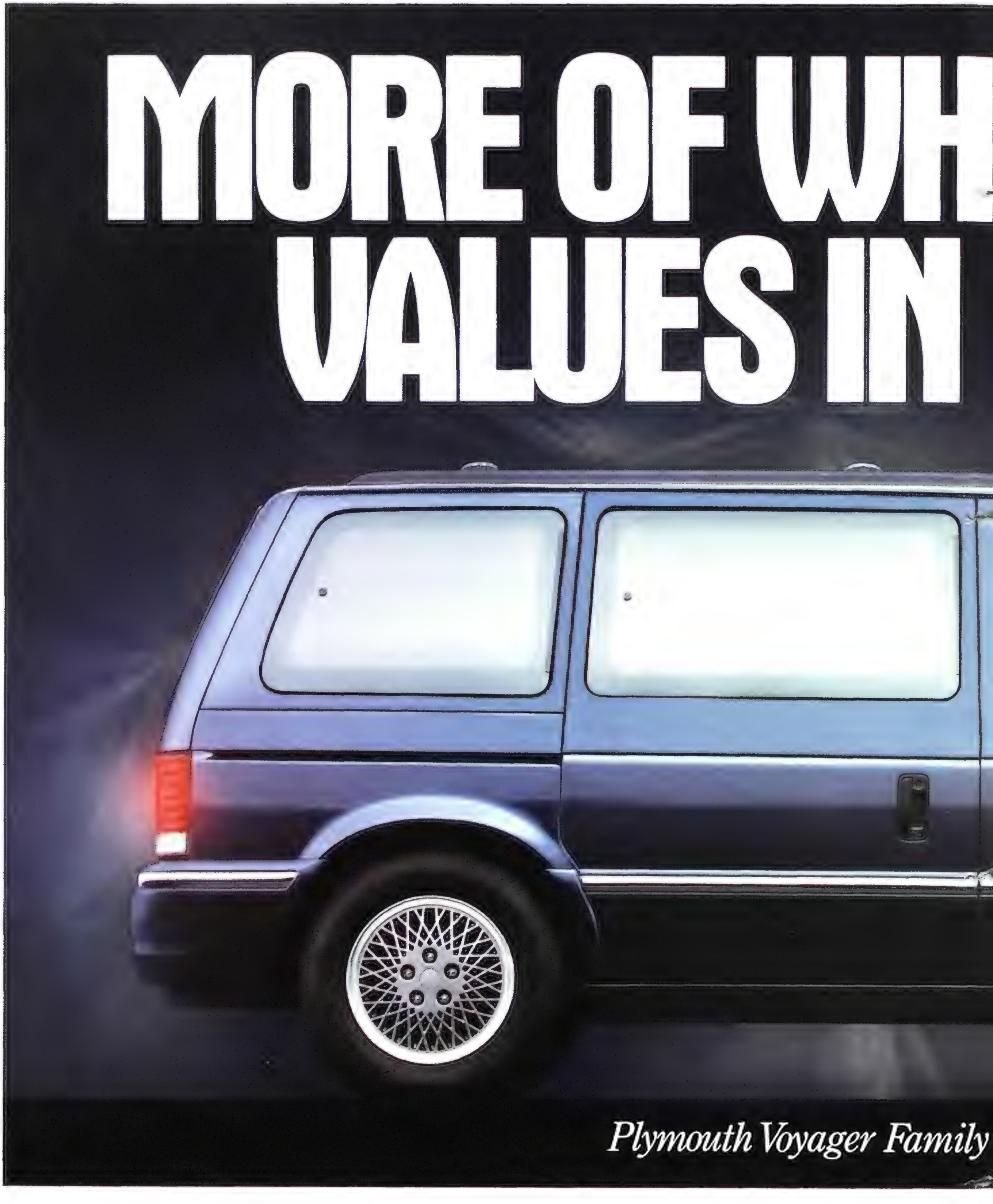

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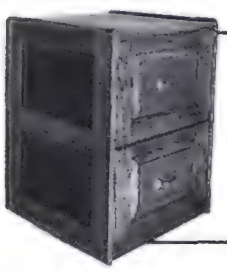

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Around the Mall and beyond

Here's the situation: Husband wakes up with terrible hangover to find home thoroughly trashed during last night's party. Thank God, he thinks, Old Battle-ax is away. Phone rings. It's the harpy herself, on her way home. Enlisting loyal-but-somewhat-dim-witted Friend to help, Hubby tries to clean up the house before driving to station to meet Old Battle-ax.

Now picture Oliver Hardy playing Husband and Stan Laurel in the role of Friend, and you've got one example of how so many of us oldsters got through the Great Depression of the 1930s. Being broke just didn't seem to matter when we watched a Hal Roach production like *Helpmates.*

In this "short subject," as it was called, Laurel and Hardy, each with the best of intentions, bumble inexorably from hilarious disaster to side-splitting catastrophe until they reach a logical outcome—complete chaos. And we of that '30s audience picked ourselves up from the aisles, mopped away the tears of laughter and went home feeling great. Depression? What Depression?

It all came back to me on a night last January when the Resident Associates threw a party for Hal Roach, the old master of Hollywood's short comedies. Hal had just turned 100, and everybody —Hal included—was celebrating. It's not every day you can touch base with so much history—in this case, the fascinating era of the film industry's infancy.

Hal Roach's career started in 1912, when he worked in Hollywood as an extra and a dollar-a-day "consultant" on cowboys (he'd been a mule skinner, among other things). As was typical back then, he managed to set himself up as a film producer in two years. He did some

Hal Roach, who recently turned 100, was the producer of comedies starring Harold Lloyd, Laurel and Hardy, and "Our Gang." In 1933, he directed Thelma Todd and Dennis King in *The Devil's Brother.*

biggies, most notably the full-length *Of Mice and Men*, and his studio later churned out lots of TV. But Hal is especially remembered for comedy.

"Janet Gaynor in *Seventh Heaven*," the posters outside your neighborhood theater would scream, "with News and Short Subjects." And that was apt to mean a 20-minute Hal Roach comedy, Laurel and Hardy, perhaps, or Charley Chase, or "Our Gang." His little films hit their stride in the '20s, kept people sane in the worst of the Depression, then faded, as double features took over the screen and used up the time. Eventually Roach moved into television where he produced such series as *The Lone Ranger, Blondie, The Life of Riley* and *Amos 'n' Andy.*

To remember all this, a mob of people gathered at the Baird Auditorium in the Museum of Natural History. They watched two Hal Roach comedies, the riotous *Helpmates* and—sillier and more dated—*The Pip from Pittsburgh*, with Charley Chase and Thelma Todd (a real dish).

Hal Roach watched too, then mounted the stage, with a bit of help, and consented to being interviewed (more or less) and to answering questions (sort of) from the audience. He looked great for a centenarian and handled the crowd with easy grace. Most of the interview was done by David Parker, a film curator at the Library of Congress acting on behalf of Richard Bann, Roach's biographer. This was flu season, and Bann had been bitten by the bug. Parker said interesting things about how Roach used the camera to point up the direction the plot was about to take. Roach comedies have a certain logic. They're the "Oh no! It can't be . . . Yes, it is!" school of humor.

Then Janet Solinger, director of the Resident Associates, gave Hal the James Smithson Bicentennial Medal, which is awarded for various good works. Hal Roach was honored for running a wonderfully creative studio where humor was king. His first star was Harold Lloyd, the bespectacled, nice young man from next door, ingenuously charming and ever beset by stupendous problems that left you rocking with guffaws. Lloyd—and Roach—led us all into a time of laughter just in the years when we needed it most.

Another large sustainer during Depression days was the popular short story. It became a well-developed craft in the '30s, with all sorts of magazines thick with fiction that in pre-TV days offered the escape we often craved.

Many magazines—the *Saturday Evening Post* particularly springs to mind—used writers who returned again and again to specific characters with special fields of interest. Protagonists were sometimes better known than their creators. In the *Post*, for example, Mr.

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Hawkins Futura

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Moto, the wily Japanese detective, rang more bells with readers than John P. Marquand, the elegant author who dreamed him up. Ephraim Tutt, that shrewd, stogie-smoking old lawyer, was popular with many thousands of families to whom Arthur Train—who invented Tutt—was a stranger.

Similarly, every American who was both literate and a dry-fly fisherman (a perfectly possible combination) applauded the arcane adages of that angling aficionado George Baldwin Potter. He appeared in stories of the late '20s and early '30s—a gentleman of some means who "either takes trout on a dry fly or he does not take them at all."

Potter is ever engrossed in his sport. Dry-fly fishing is his passion. And since he has married the beautiful young Isabelle, who can't tell a fan-wing Royal Coachman from a No. 16 Light Cahill, and wants to keep it that way, all sorts of outlandish marital problems arise.

These are the stories that George Potter relates, with many interruptions for earnest explanations of why the three-ounce Spinoza is a matchless rod, and why a spent-wing Lady Beaverkill should, in some waters, be replaced by a Skews Hackle No. 14. Look, the guy describes fishing equipment the way James Bond goes on about cars and vodka martinis. Still, there's a lot more here than just angling. Like many of the film comedies of the '30s, these stories center on a bittersweet, sophisticated war between the sexes. A moment comes, for instance, when "fashionable Isabelle, hijacked into the Maine woods for a honeymoon" that she expected to spend in Narragansett, bursts into tears and refuses to wear the dumpy fishing clothes George desperately assembles for her. "I wouldn't let a fish see me looking like that," she says. No one who encounters George and Isabelle will ever again believe that marriages are made in heaven.

After writing, John Taintor Foote, whose short stories have lately been reissued, went out to fish or hunt.

George Baldwin Potter drew thousands of devotees; the stories, printed individually in slender book form, became minor classics, and John Taintor Foote, the writer who created them, eventually grew celebrated. As it happens, John Taintor Foote's son Timothy Foote is one of the editors of this magazine. He came here after being a foreign correspondent based in Paris, and a senior editor of *Time*. These days he mostly devotes himself to stories about history and culture. You can encounter his turns of phrase as a writer by thumbing forward from this column to our cover story, and his turns of mind as an editor in articles about the Salem witch trials of 300 years ago, and the tongue-in-cheek social history of the T-shirt.

He has lately edited, written introductions for and otherwise augmented a small, delightful book, *A Wedding Gift*, which Lyons & Burford of New York has just published. It contains three classic George Baldwin Potter stories by John Taintor Foote, followed by one brand-new George Baldwin Potter III story by Timothy Foote, about a life almost blasted by trout fishing.

Foote the younger's introductions—to the book and to each of its stories—and his biographical notes about his father reveal a good deal about Foote the elder. He emerged from Leadville, Colorado, started out in journalism, did some advertising work that paid handsomely, and in the early '20s took off with plays, novels and short fiction. Two comedies made it to Broadway, and the beautiful ingenue of one became Mrs. John Taintor Foote, and the mother of two boys. Tim and his brother grew up in a house on the Beaverkill River, which flows through the Catskills of New York. "Fishing was what everyone did up there," says Tim. "And you did it with a dry fly."

The elder Foote was an avid fisherman but, Tim notes, "not obsessed like George Baldwin Potter." Tim's mother,

though she partly inspired the Isabelle character, was, unlike Isabelle, "no incipient suburban matron." A Canadian, she knew all about country living and quickly learned to fish.

Tim remembers his father writing in the mornings, "sitting in a big, low, wicker chair, penciling his words on lined paper." He never ate lunch. But at 2 or 3 in the afternoon he'd call it a day and go off to the stream to fish. Or, if it was fall, to shoot partridge or woodcock. "He knew hunting dogs," says his son, "and he knew horses. And he knew dry-fly fishing when it was still a *really* arcane pursuit."

Fishing, hunting, horses and bird dogs (especially in a famous story called *Dumb-Bell of Brookfield*) became subjects for John Taintor Foote stories that carried people away to a different, and better, place. The new little book, with its four longish short stories, has the same magic. I put it down reluctantly, glanced at the TV set and for a moment wondered what that thing was.

Tim was still a boy when John Taintor Foote headed off to Hollywood to transform one of his stories into the screenplay for *Kentucky* (Loretta Young —remember?). He took up screen writing seriously, doing a number of films, including *The Mark of Zorro*. Probably he knew Hal Roach.

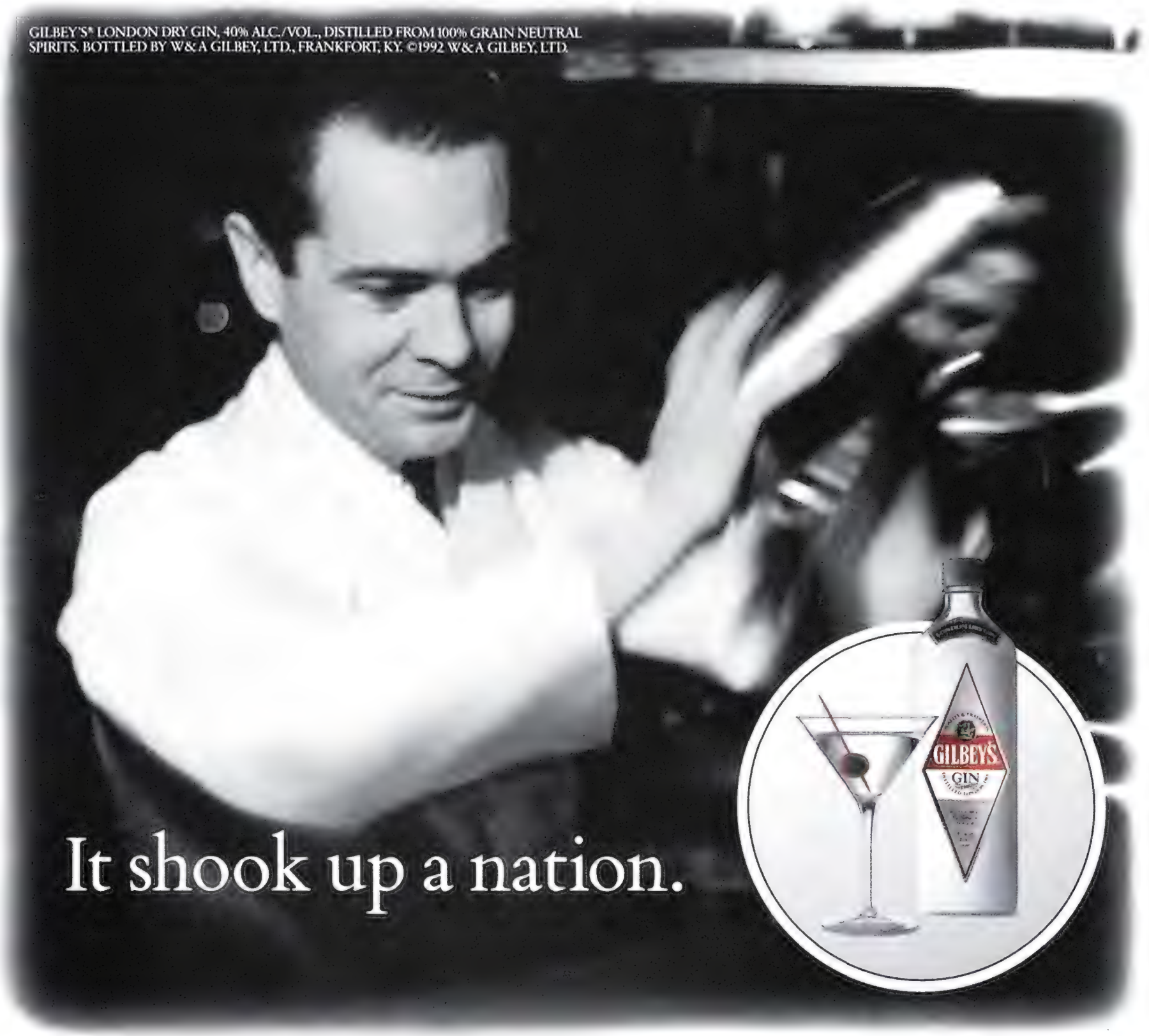
The house on the Beaverkill still stands, still with J. T. Foote's study and fishing room, still filled with boyhood memories. Tim still fishes the Beaverkill, sometimes using the three-and-three-eighths-ounce F. E. Thomas Special his dad gave him just before leaving for Hollywood.

He tells of a stretch of fast water that sweeps into a deep, hemlock-shaded pool and pauses there as if to draw a slow, quiet breath before tumbling onward. During the evening rise, deer come there to drink, and beavers slap their tails. Merganser ducks (hell on trout, but fun to see) swim up to the rapids, then skitter into the air off the riffles.

Since I'm now a devotee of George Baldwin Potter, I can take it from there. You make your cast, three-quarters upstream, with a hair-fine, nine-foot leader, deftly dropping your fly—perhaps a Dark Hendrickson—so that it floats alluringly on the pool's dark surface. Under there, tail winnowing gently, lies the Titan . . .

Recession? What recession?

Edwards Park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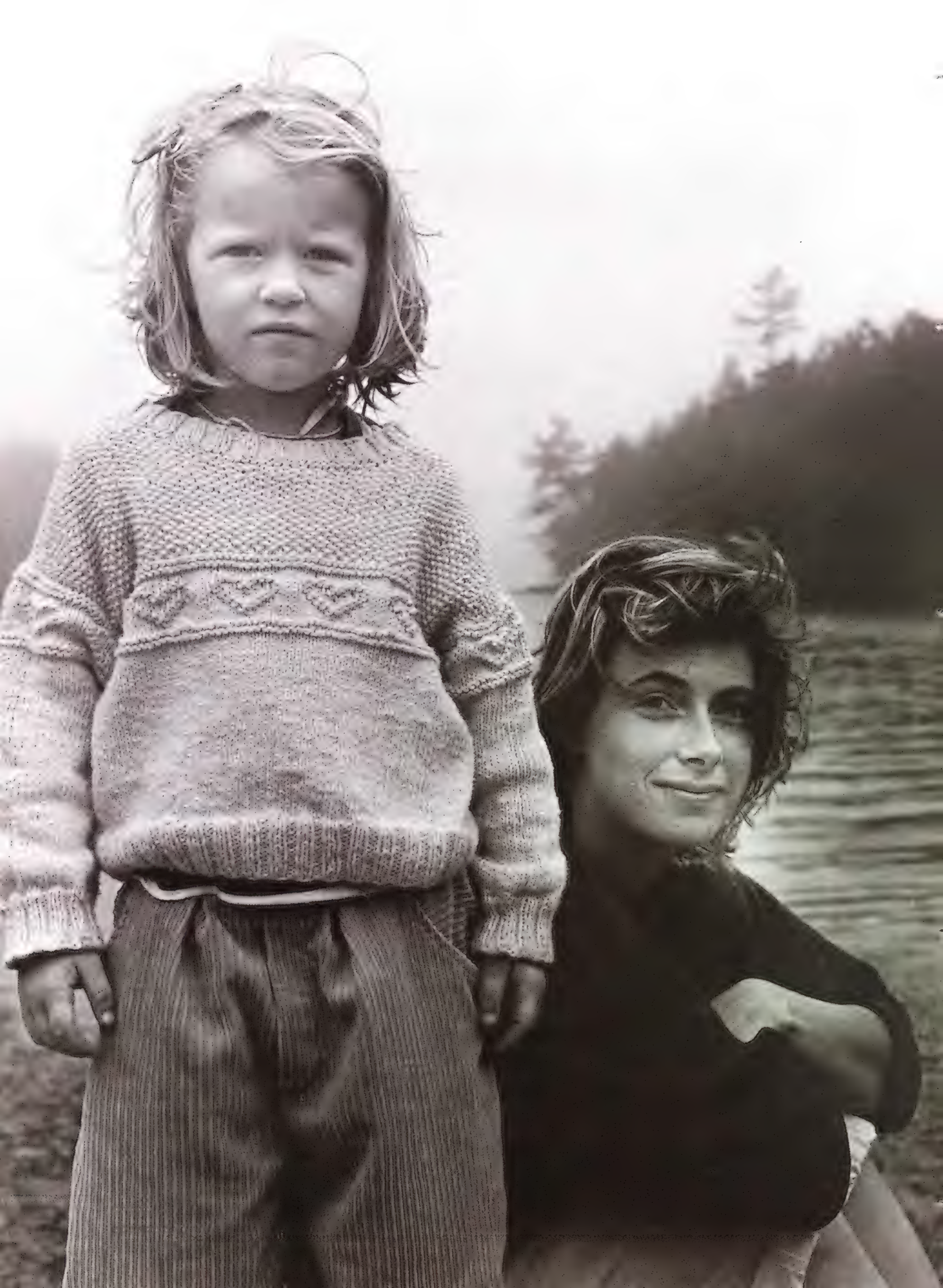

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By Mark Fischetti

Here comes the electric car—it's sporty, aggressive and clean

GM wants to win the race to be first out with the car of tomorrow, but it takes time to convert a radical idea 'from dream to gleam'

Taking the Impact out for a spin, GM driver pushes a button to display information at base of windshield.

"All right, how do I start this mule?" I asked, eagerly gripping the wheel of the car parked outside the General Motors Technical Center in Warren, Michigan. Pat Bouchard, an engineer, answered from the passenger side. "Turn the key, then push the 'F' button."

"The what?"

"The 'F' button. See those three buttons on the dashboard? 'F' is for forward, 'N' for neutral and 'R' for reverse."

Hmmm. I turned the key. Nothing happened. Pat nodded toward the buttons, but when I pushed "F," still nothing. "You're in forward now, but you won't go anywhere until you press the accelerator," he said.

I depressed the pedal gently, and we eased across the parking lot. The car was silent. We rolled onto the fenced-in test track. Enough hesitancy, I thought; I flattened the accelerator to the floor. The car took off at an alarming rate. I tensed up, waiting for the lurch of the gear change, but it never came. We just kept going faster and faster.

Only now it was no longer quiet. From under the hood came a whining sound that reminded me of the electric whir of a modern subway. At 70 miles per hour I hopped off the accelerator. The whining vanished. There was just the rush of the wind and the grumble of the tires across the pavement. The speedometer floated down to 69, 68; we hardly slowed. We slipped along like an ice skater gliding across a glassy pond.

That "mule"—industry lingo for a test car—was a conventional GM automobile whose guts had been ripped out and replaced with a system of batteries, motors and high-voltage electronics. It was being used to test components of what is likely to become the world's first mass-produced electric car—the Impact. The prototype sat in a bay at the mammoth Tech Center under a silky black tarp, its silver body polished for a trip to the White House the next morning. It had been summoned by George Bush for use as a prop during an outdoor press conference, a symbol to backdrop the self-styled "Environmental President" as he

By minimizing air resistance, sleek teardrop shape reduces drag. The key to high performance in electric car is to keep both weight and friction down while "optimizing" every component used in motor and body.

cheered on American carmakers in their quest to win the international race to produce a popular electric car.

The Impact is indeed an environmental symbol, one that reflects the auto industry's response to the public's growing intolerance for pollution. It is also a symbol of what may be a last-gasp effort by troubled domestic manufacturers to attain a technological edge over their global competitors. GM is in the midst of the most painful restructuring in its history, eliminating tens of thousands of jobs and shutting down 21 plants. The Impact is critical to its long-term success.

At the turn of the century, three technologies vied for supremacy in the nascent auto business: steam engines, gasoline engines and battery-powered motors. Gasoline engines left the others in the dust. By 1924 not a single electric vehicle was exhibited at the National Automobile Show. The Stanley Steamer was scrapped the same year.

Photographs by Peter Angelo Simon

The race to produce an electric car

Program manager Ken Baker prepares to plug electric cord into one version of Impact's "charging port."

It wasn't until the 1960s that electrics came back. They fit the conscience of the flower-power movement: they used no gasoline from the big bad oil companies and produced no pollution. Just plug them in and recharge the batteries. But they were slow and didn't go far between charges. The gas-station lines of 1979 renewed interest. Economists predicted that if the pump price rose to $2 a gallon, battery power would be cost-competitive for commuter cars, for which speed and range are less critical. GM introduced the Electrovette, which went 40 miles on a charge. After gas prices leveled off, the program was scuttled.

Environmentally, electric cars have always made sense. They do produce a few pollutants indirectly because power plants must generate the electricity needed to charge the batteries. Taking these into account, however, electric cars release 98 percent less carbon monoxide and nitrous oxides, and 25 percent less carbon dioxide than conventional cars, according to Steve McCrea at the Electric Auto Association. Says McCrea, "It's easier to clean one smokestack than a million tail pipes."

GM did not forsake the electric option altogether. In 1987 it entered the World Solar Challenge, a 1,950-mile race across Australia for cars powered by solar cells. It backed a team led by Paul MacCready, chairman of AeroVironment, a small, maverick design firm in Southern California. His vehicle, the Sunraycer, outshone the field, finishing two and a half days ahead of the closest competitor (SMITHSONIAN, February 1988).

Maverick inventor goes corporate

MacCready, inventor of the first successful human-powered aircraft, wanted to try the aerodynamics and electrical systems his team had developed on a commercial vehicle. He knew solar cells would never generate enough current to propel a practical car, but strong batteries could. So AeroVironment went to work with GM's own design skunk works, located a few miles away, and electronics engineers at the Hughes company. Design battles erupted, and the group got nowhere for months. When GM executives caught wind of the stalemate, they put an end to it. Foreseeing a publicity coup, chairman Roger Smith was determined to exhibit an electric car at the Los Angeles Auto Show in January 1990. In six months the California team produced the Impact.

On an Arizona test track before the show, the 2,200-pound two-seater blew away one sports car after another in a series of drag races. Propelled by 870 pounds of lead-acid batteries, an advanced form of the batteries that are under the hood of every conventional car on the road, it had a top speed of 110 mph and went 120 miles between charges. Why such great per-

In early 1900s, electric autos and charging devices were widely marketed. Gasoline-car boosters claimed that the electrics could not climb hills and were unsafe because pedestrians couldn't hear them coming.

formance? Its air resistance was one-third lower than that of any production car, and its special tires had half the rolling resistance of conventional rubber. It had a novel box called an inverter that was filled with rugged electronics to transfer battery current to two powerful induction motors, which drove the front wheels much more efficiently than a combustion engine. The test vehicle was completely impractical, of course—its cost was prohibitive, it was unstable in turns, and it would shatter into fiberglass shards in a crash. But it was an aggressive car, and it was electric.

The Impact blew away the audience at the auto show, too. Not only was the car novel and exciting, but it looked like a million bucks. Some consumers were so taken with it that they mailed checks to GM as down payments.

This surprised even Smith, who suddenly found himself confronting a tough decision. Should GM risk serious money on an attempt to turn this delicate, handmade icon into a salable car? Smith's decision was made easier by the news from California. Increasingly frustrated by dangerous smog in the Los Angeles area, the state Air Resources Board had proposed a radical measure: demand that auto companies sell a certain number of pollution-free cars. Smith saw another opportunity to be a trendsetter. In April, just before Earth Day 1990, he announced that GM would produce an electric car.

Analysts didn't put much stock in that, but the California Legislature did. It passed a law that has shaken the entire auto industry. By 1998, if a company wants to sell at all in California, then 2 percent of its sales must consist of vehicles with no tail-pipe emissions. That means only one thing: electric cars. By 2003, at least 10 percent of the autos sold in the state—now more than 200,000 annually—must meet the standard. The California market was too important to ignore. The gauntlet had been thrown down. Someone would have to turn the Impact vision into reality.

That someone was Ken Baker, a 45-year-old mechanical engineer from upstate New York. "My initial reaction," says Baker, who ran the Electrovette program, "was, oh God, do I want to get into the electric car again? But I quickly recognized this was a chance to rewrite automotive history."

Baker paired up with engineer John Williams. "We didn't know who our customers were or what they would want," Baker recalls. He put his team—at that

Mark Fischetti, a writer who specializes in technology, business and science, drives two clunkers—one is foreign, one domestic—around Lenox, Massachusetts.

Car's major components are depicted: power from the battery pack is converted from DC to AC by an inverter and sent to motors, which turn front wheels; special low-resistance tires and aluminum frame save energy.

point a dozen top managers—on a plane to Los Angeles, and early the next morning they headed out for the suburbs to interview commuters. Each team member drove to work with a willing host. During the ride they discussed commuting habits and how an electric car might fit in. The conclusion: consumers would want the same things from an electric car that they got from their present cars.

That was no small order. When a driver turned the key in the Impact, a row of batteries produced current. An inverter changed the current from DC to AC and sent it to the two induction motors, each of which turned one of the front wheels. Though straightforward in concept, the car had one major drawback. When all 870 pounds of its batteries were fully charged, they contained as much energy as a gallon of gasoline.

Presented with this startling comparison, each team member realized the project would be an "unrelenting struggle to optimize every component," says Williams. Every change in the car's shape that lowered air resistance would enable it to go extra miles before recharging. Every pound shaved would extend its range.

GM pushed on. In March 1991 president Lloyd Reuss revealed that GM would convert its assembly plant in Lansing, Michigan, which had been producing Buick Reattas, to produce the Impact. But because GM, like other car companies, was struggling financially, Reuss gave Baker a budget one-fourth the size of that usually earmarked for a new-car program. He also told Baker he would not have the usual five years to convert a car from "dream to gleam." The other auto companies would have to respond to the California law, too. GM had been first with the concept; it had to be first with a car.

As Baker parceled out jobs to the 200 or so people who would be assigned to the engineering project, the designers went back to the drawing board. Literally. They set up a studio at the Tech Center and began to resketch the Impact. Mark Kaski, who had worked in tandem with AeroVironment, joined the effort.

Months of redesign had gone by—but months still remained—when I visited the Tech Center last fall. I noticed an earthen smell as soon as I entered the studio. It was coming from a full-sized clay model of the Impact. Several casually dressed artisans chattered away as they shaved and smoothed the clay. Kaski's reference sketches were plastered all over the walls.

Kaski had drawn hundreds of shapes for the show car, looking for a vehicle with extremely low air resistance. "Some were wow-ee! Some were just blobs," he said, constantly sketching as he talked. One influence was a picture of the Bertone BAT made by Alfa Romeo

in the 1950s. The BAT was shaped like a long teardrop with high back fins. Kaski adapted a sketch, the team built a clay model, and then they put it in a wind tunnel for tests. The drag coefficient, the measure of air resistance, was very low. After more work, the shape for the show car was set. By then, its drag coefficient was down to an impressive 0.19. The best production cars reached only 0.26.

Back at the Tech Center, though, Kaski and the rest of the design team ran into all kinds of problems. The show car was too low. It sat only five inches off the ground; minimum commercial clearance is eight inches. Engineers needed more room under the hood for the electronics and a bulkier structure to survive a crash. Each stipulation drove up air resistance.

Then came worse news. A study of the car's road worthiness showed that the various modifications made it 400 pounds heavier. Engineers had to make changes. When they did, Kaski had to redraw. After each iteration, the crowd met in the wind tunnel across the GM campus. It was John Szurpicki, the lead aerodynamicist, who had to keep the conflicting designers and engineers focused on one goal: lowering air resistance. "Every little detail affected drag, and almost all added to it," he explained, making no effort to mask his frustration.

By the time of my visit, Szurpicki had beaten the number down some by imposing his own design changes, but it was still not low enough. "Just yesterday I finished a test, and of course it was way the hell over target," he said as we climbed up the steps to the wind tunnel. "We just have to keep playing with it."

You'll never drive in a tunnel like this

We entered the control room, which looks out across the center of the tunnel. Through the heavy glass wall we saw three engineers crouched on the floor, poking at a one-third-scale clay model of a 1996 car. We stepped in for just a moment. The model was laughably tiny inside the cavern, which was shaped like a gargantuan hourglass lying on its side. I looked to my left, to one distant end of the hourglass. Giant screens that direct the incoming wind rose seven stories high. Thick walls pinched in sharply to the test section, only 15 feet high and 30 feet wide. To the right, the walls opened again, disappearing into darkness a quarter-mile off. Strain gauges in the floor of the test platform record head-on air resistance, rocking, and lift or sink at each wheel of a scale model placed there; the system is so sensitive that it can detect the placement of a half-dollar on the hood of a 4,000-pound vehicle.

"Everybody out," one engineer called. We hurried into the control room, and the fans were turned on. The wind built rapidly to hurricane force, howling past us at 130 mph. If you opened the door and stuck your arm out, the wind would just about rip it off. Szurpicki smiled as he told me that.

Engineers at GM's Delco Remy division weren't smiling when I found them, hidden away in a nondescript industrial shop located in a neighborhood of churches north of Indianapolis. They were charged with developing the Impact's motors and batteries, two of the most secretive parts of the program. They had already gone through nine motor designs. Other alterations were under way, too, driven by practical ownership issues. In the show car, the electronics had been placed just behind the car's nose. They were being moved, according to Bill Wylam, the engineer heading up the Delco Remy team, because insurance experts pointed out that even a fender bender could cause extensive damage.

Still other changes would be made for safety reasons. The column of batteries, which runs from the dashboard through the center of the trunk, produces 320 volts of electricity, more than enough to kill you.

The inverter is surprisingly compact, but it packs as much power as a pair of 50,000-watt radio stations.

Modelers in design studio take measurements while computerized milling machine shaves clay prototype.

In mock-up room, designers and engineers make wood and foam parts to see how they all fit together.

"We have to redesign the battery pack to keep people out of there no matter how hard they try to get in," said Ron Martin, the man in charge of Delco Remy's motor work.

Safety considerations influenced engine design, too. Engineers began thinking seriously about using a single induction motor, instead of the two smaller motors originally planned. If each wheel had a motor, and one were to fail while the car was streaking along, Martin explained, the car could, for an instant, swerve violently to one side because of the sudden loss of torque at one wheel.

The next challenge was to improve motor efficiency and reduce motor weight. "I could make a housing out of magnesium instead of aluminum," Martin said, pacing around shop benches strewn with windings, "and I would save 12 pounds. But we'd have to spend more research money, and the end product would cost $100 more. I could reduce the horsepower by 25 percent, lowering the weight and cost, but then the car wouldn't accelerate as quickly, and we'd lose buyers."

Martin had hit upon the central quandary that confronts GM. Each step to improve efficiency or save weight can add to the final cost or limit performance.

The need to hold down cost influenced Delco Remy's choice of batteries, too. Batteries have been the bane of electric vehicles from the beginning. Numerous chemical combinations have been tried—nickel-cadmium, nickel-zinc, sodium-sulfur, lithium-polymer. All have a critical fault. They can't store enough energy to give extended range or they can't supply enough current for good acceleration or they are outrageously expensive. Lead-acid batteries have always provided the best compromise.

The Impact's batteries are a high-performance species of the old reliable. They can store more energy, are more compact and require no maintenance. But there is a catch. The entire "corridor" of 32 batteries will have to be replaced every 20,000 miles or so, at a cost currently estimated at $1,500 or more.

Each time Wylam or Kaski or anyone else makes a substantive hardware change, the details are sent to the Parts Fabrication unit back at the Tech Center. There, scores of modelmakers fashion prototype cars by hand. In the process, they prove all design changes, motor configurations and structural adjustments either doable or impossible.

"Parts Fab" is a craftsman's paradise—an indoor city of shops furnished with every tool imaginable, from 16-foot-high metal presses and computer-controlled milling machines to rows and rows of wrenches, chisels, files, gauges and homemade instruments. Every single part of a car can be made here, to exact manufacturing tolerances, by people who carve wood, stamp metal, cast plastic. The purpose is to fine-tune parts so they fit and operate properly, and to create molds for manufacturing dies that are put out onto the assembly line.

The boss of the modelmakers is Otto Kroll. When I talked to him about the Impact, he was getting impatient. He was already supposed to be building the first

Men at left are discussing steering wheel location; those at right are working on inverter and batteries.

Mark Kaski sketches and resketches details in studio. The box to his left holds mock-up of control buttons.

prototype cars, but the redesign was pushing that back. "It will take months to build this car," Kroll said, running his hand over a smooth door mold sculpted in mahogany, as a cacophony of drilling and banging surrounded us. "Almost every piece is new. Now the design is late, and our time will be crunched."

Kroll was waiting in particular for the car's internal design. With such a heavy battery pack, a 2,200-pound car is possible only if its frame is made from aluminum, not steel. The structure would be a spaceframe, a skeleton on which body panels are hung. That approach would cut body weight by 33 percent.

Aluminum spaceframes have been used widely in aerospace work but not much in the auto industry because it is difficult to ensure strongly welded joints on a production line. GM will use both spot-welds and special adhesives. "We're developing standards from scratch," said manufacturing engineer Chris Chisholm. "The question is, can we do it economically at production quantities. Everything comes down to money."

As it is for Delco Remy, the Impact is serving as a test program for manufacturing. And here, too, the work is taking place in secret, this time at an independent tool shop a few miles from the Tech Center. Metal shavings crunched beneath my feet as I walked with Chisholm into the shop where Bob Thornton, a veteran GM welding engineer, had built a prototype welder. It cranked out parts that were then pulled, twisted and crushed to test for strength.

The need to keep aluminum welds away from edges was complicating the design task. For example, Kaski wanted the vertical pillars that run along each edge of the windshield, from the hood to the roof, to be very thin to increase driver visibility. But Chisholm needed wider pillars to allow tolerance for the welds.

At the tool shop, people working with the prototype welder were wearing protective clothing. As molten aluminum hit this clothing, it immediately cooled and oxidized, turning white. "If you see a guy walking around here with white stripes on his chest," Thornton quipped, "he's been welding aluminum."

Subsections of the car that have been pieced together in Parts Fab are sent to GM's proving grounds in Milford, 45 minutes west of the Tech Center. There, Gary Witzenburg, who will be putting the Impact through its paces, drove me around in a '92 Bonneville. We cruised along the top of a ridge that looks out over a valley covered with every kind of road imaginable, from high-speed ovals to serpentine turns to jagged Belgian-block pathways. "Anything you want to do to a car, you can do here," Witzenburg said as he plunged us over the side of the ridge and raced down an insane chute as steep as the "big hill" on a roller coaster, pancaking at the bottom and banking into a turn.

Witzenburg and his colleagues function much like a pit crew. They assess handling, braking, steering and interior noise and begin to make adjustments, adding bushings to tighten the steering, laying insulation to block noise or adjusting suspension to improve ride. Back at the pit, the crew had just received the first full

Workers calibrate and sculpt model. Millimeters mean a lot because air drag is a major cause of energy loss.

To get a good look at air flow, engineer holds smoke wand over a full-sized model of Impact in wind tunnel.

front-end suspension for the Impact and had attached it to a test vehicle that looked like a stripped dune buggy. One crewmember was hunched over the open front end, another was crawling beneath it. If, after driving it, the crew found that the aluminum struts were weakening, heavier metal would be needed. On the other hand, if the front end turned out to be overbuilt, a few pounds could be saved.

Like the folks at Parts Fab, the pit crew was getting anxious. Witzenburg made no bones about it. Fiddling nervously with some keys in his pocket, he told me, "We can't wait to get our hands on the real cars."

The marketing people were anxious to get their hands on some real cars, too. Even if the Impact turned out to be a technical success, it would be a hard sell. No one was prepared to say how much it would cost or when it would be available. Auto analysts predicted the car would run anywhere from $20,000 to $30,000 and be available in 1993 or '94.

What GM did say was that it intended to market the Impact as a second car. When Ken Baker's team talked with those commuters, they learned that most drive fewer than ten miles to work. Other studies indicate that most second cars are driven fewer than 25 miles a day.

The problem, as analysts see it, is price. "Here I sit in San Francisco," said Ronald Glantz, head of West Coast research for Dean Witter Reynolds. "I commute a short distance. I'm the perfect target customer. You know what I drive? A clunker. That's what GM is competing with. Even if someone wants a new car, he's not going to spend $20,000 solely for commuting."

The car is likely to sell the first year or two because there are enough people out there with money who want to be the first on the block. But in the long run, convenience will be the prime incentive. Los Angeles, for example, may allow electrics to drive in high-occupancy lanes even if they don't have any passengers.

GM's board chairman, Robert Stempel, is not waiting for such carrots to materialize. He has sent his people out to lobby at the local, state and federal levels for everything from preferred parking spaces to discounted electric rates. They are also working to erase inconveniences that might hinder sales. For example, if employers and shopping malls would install public battery-charging stations, drivers could recharge their cars between trips. Los Angeles is already considering a plan to install numerous charging outlets, resembling parking meters, at parking facilities. GM must also distribute spare parts, and train dealers to repair electrics.

The consumer will have to be educated, too. How long does it take to recharge the batteries? Will the Impact cost less to run than a gasoline car? Some quick answers: if the batteries are fully run down, it will take two to three hours to recharge them using 220-volt current, but if you deplete them by only 15 or 20 percent, it will take only 20 to 30 minutes. You would spend perhaps 20 percent less to operate the car, including the cost of replacement batteries. The per-mile cost of electricity used for recharging is roughly one-fifth the cost of gasoline. Maintenance is much less—there's no oil to change, no need for tune-ups, no muffler to fix. Over the average life of a car, according to Steve McCrea of the Electric Auto Association, an electric vehicle will cost about $5,000 less to run.

Robert Stempel acknowledges that the Impact may sell only as a specialty car. GM will not produce many of them, but for Stempel that's just fine. "We sell passenger cars, sports cars, vans, light-duty trucks—a

vehicle for each lifestyle," he says. "So why not an electric car for your commuting needs?" (When so many car ads tout safety, some have questioned naming the car the "Impact." One wag guessed that Ford might come out with the "Whiplash.")

Even if sales are slow, the new technology spun off from the Impact may be worth the investment all by itself. Lightweight aluminum frames, for example, could enable gasoline cars to get more miles to the gallon. The electrical work will pay dividends, too. The demands of today's conventional cars for everything from electronically assisted power steering to electrically heated seats are getting so high that traditional power systems will soon be inadequate.

But the overriding purpose of the Impact program has more to do with prestige than technology. GM won't be alone in the electric car market. Nissan has unveiled a prototype, and Honda has retained the services of Alan Cocconi, the electronics guru who invented Impact's inverter. Ford, Peugeot, Chrysler, BMW, Fiat and others have announced their own plans, and Volkswagen has teamed up with Swatch (of plastic watch fame) to produce the "Swatchmobile," a $6,000 electric-gasoline hybrid just big enough to carry "two people and two cases of beer." "The greatest reward for being first will be in securing an image as the technical leader in the automobile industry," Baker says.

Stempel thinks GM is leading the electric-car race. But because the public's initial reaction to such a radical product is likely to be cautious, he sends a strong warning to all of the competitors, including his own team. "If you're going to be first out, your car had better be awfully good. If you come out first and it's bad, it'll kill electric cars for everybody."

Can Ken Baker possibly have any stronger incentive? It seems so. "Here I have the President of the United States saying the Impact is of national significance, and the head of General Motors saying the Impact is of corporate significance. But the importance of bringing automotive leadership back to America hit me much earlier. It was the day we went to the Lansing plant, which was then in danger of being shut down. We told the people that they were no longer going to build the Reatta there, but that they would be involved in launching the new electric car. There was resounding applause. Then one of the fellas from the line walked up to me and said, 'You know, for generations this plant has provided for my family. Thanks for giving me a chance to keep it here.' That's what drives me. That's why this is the chance of a lifetime."

Development engineer Gary Witzenburg puts the experimental Impact through tests at proving grounds in Arizona. When the car is finally ready for mass production, it may signify the beginning of a new era.

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Whimsical windows of new museum building (right) lure pedestrians in. Inside, the grand stairway (opposite) leads up to the galleries. Animals and standing figures from Chinese Ming and Qing dynasty tombs guard the way.

By Helen Dudar

A welcoming new museum for the city on the sound

You'll never see a jaywalker in Seattle, but you will find a user-friendly home for a grand and eclectic collection of art

The Seattle Art Museum formally opened the doors of its new home last December. It rained all day. Several of the galleries were unfinished. A monumental outdoor sculpture, damaged during installation, was 3,000 miles away, being entirely rebuilt. And a nasty wrangle over building costs clouded the future.

Sing no sad songs for Seattle. Somehow the sponsors of this long-awaited event managed to transform the morning into a moment of high civic cheer. A sea of umbrellas surrounded the outdoor inaugural ceremonies, and for much of the day, while wet winds scudded off Puget Sound, the lines waiting for admission snaked around the building. In what amounted to a nonstop gala, the celebration continued for two weeks: parties by day and parties by night, parties for everyone who has supported the project. Moreover, having managed to round up a half-million dollars in corporate funds to finance the festivities, the formidable organizers of these events passed up an obvious opportunity to extract more loose change from guests. For once, a museum was thanking its constituency without asking for more money.

This display of undemanding hospitality was surely rooted in gratitude and, despite the recent travails, in something like amazed relief. After nearly two decades of talk, after false starts and a cliff-hanger campaign for a bond levy, after arduous efforts to gather in the greater part of the $62 million that the expansion cost, the Seattle museum had finally settled into a convenient downtown district.

It had a café and a Japanese teahouse; it had an auditorium, a library and a freight elevator strong enough to hold a 10,000-pound work of art. It had room for a conservation department, although there wasn't the money to equip it. And at last, it had space to show some first-rate art that had been squirreled away in storage for years.

All this was housed in a new, assertively boxy building that suddenly had acquired cachet. The people who run the institution are given to saying that Robert Venturi was chosen in 1984 to design a new museum because it was clear that "his time had come." Vague though it is, the phrase suggests a tidy prescience. Last spring, while the building was still a hazardous maze of construction materials, Venturi, at the age of 65, was awarded the Pritzker Architecture Prize, his profession's equivalent of the Nobel.

A touch of good fortune, it was the kind of odd luck that has circled the museum through decades of an odd history. In Volunteer Park, a pretty patch of green four miles or so from the Venturi structure, stands Seattle's

first city museum building. Although it has existed for 59 years, cabdrivers sometimes have trouble finding the way there, and those residents who are infrequent visitors are apt to think of it fondly, if patronizingly, as "that cute little museum." Actually, it is roomier inside than it looks, and it is a sophisticated design, a jewel of the Art Deco period. When it is renovated and reopens in 1993, its galleries will be devoted to a rich store of Asian art—impressive evidence of the prime interests of Dr. Richard E. Fuller, whose fortune built the place, staffed it and largely supported it through its first four decades.

Fuller's doctorate was in geology, and his money arrived through his father. The elder Fuller, a successful urologist, was an even more successful investor, a talent the son inherited. In the early 1920s, when this well-traveled family settled in Seattle, the Fullers were already afflicted with collecting fever. Richard's mother, Margaret, had started with fine Chinese snuff bottles, which she bought in quantities; later, in New York and in travels abroad, the Fullers found other Asian treasures, including a dazzle of carved jade pieces.

Richard Fuller and his mother, Margaret, gave Seattle its first city art museum, an Art Deco jewel, in 1933.

Inevitably, they ran out of space at home. In 1930, Richard Fuller, a commanding figure even at the age of 23, found himself president of the venerable Art Institute of Seattle; the following year, he and his widowed mother made the city an offer it could not refuse. Seattle, which had one small public gallery, needed a full-scale museum. In the depths of a pitiless depression, the Fullers were prepared to spend $250,000 to build one in Volunteer Park on the site of a rose arbor, and to stock it with their valuables.

The Seattle Art Museum—"SAM" in headlinese that causes its current director to wince—unlocked brilliantly decorated doors on June 30, 1933, and for the next 40 years Fuller ran the place as his fief. The building was given to the city, which paid maintenance costs; Fuller took care of the salaries of a tiny staff and bought the art, mostly art of his choosing.

Because the museum at first had little in the way of Western art, Fuller augmented the collection with reproductions of the works of such Old Masters as Rembrandt, Raphael and Botticelli. In time they would be replaced by a trickle of gifts from individual donors—a good Cranach, a doubtful Bruegel—and from the Samuel H. Kress Foundation. Around the country, struggling young museums lucky enough to have a Kress dime store in their town fulfilled the primary requirement for donations and got Kress art that the new National Gallery in Washington, D.C. did not want.

A major presence in a young city without a commercial gallery scene, Fuller continued the local tradition of organizing Northwest Annuals to show living regional artists. He paid Mark Tobey a regular stipend in exchange for his paintings; bought works, sometimes lackluster ones, from artists down on their luck; and made jobs for some future stars—in periods when money was scarce, Morris Graves could be found laboring at SAM.

Fuller's talents included a canny technique for prying the best buys out of dealers. John Hauberg, a local timber baron, friend, collector, pillar of Seattle's cultural life and veteran trustee, says Fuller knew every important antiquities dealer on three continents. "He would typically send a check at Christmas for maybe $5,000, a lot of money in those days, and he would write, 'I will be visiting you during the coming year and I want you to have something nice to offer me.' Well, those people loved him; he saved their lives."

Helen Dudar, a frequent contributor of art stories to SMITHSONIAN, *has written about the Fauves (October 1990) and Robert Rauschenberg (May 1991).*

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Virginia Wright, president of the museum's board, and her husband, Bagley, collect 20th-century art.

The staff also loved Fuller, despite a parsimonious wage scale. "The last of the Edwardian gentlemen" is the way he was often described, says Dorothy Lahr, a retired SAM educator and a historian of the museum. Occasionally, she recalls, he would jokingly refer to himself as a "benevolent dictator," a judgment his peers would not quarrel with. Hauberg speaks of him fondly as "a marvelous man, a great civic man" and an unembarrassed elitist.

The board was stacked with affluent friends unlikely to challenge Fuller's dominance, but this didn't mean he wanted their money. "Dick felt that if he allowed people to contribute funds, they would want a voice in running it," Hauberg recalls. "I remember overhearing one gentleman offer a contribution of several thousand dollars, and Dick replying, 'I wish you wouldn't do that. It's very embarrassing.' "

In time, however, major infusions of money were needed and accepted for expansion. Once, after Hauberg provided $50,000 for new construction, he made a casual suggestion about some museum problem. "Just because you've given this money," Fuller snapped, "don't think you can run things around here."

By the late '60s, illness and financial reverses were eroding Fuller's rule. While he was hardly impoverished, he no longer had the lavish means to support a museum. For three years, Hauberg, with two other trustees and museum staff, helped run the place. By 1973 it was clear that a full-time professional director and some serious fundraising were needed. One day, the board met to discuss finding a new director.

Tears and a unanimous vote

"A dreadful meeting," Hauberg recalls. "All the ladies cried. All the men had tears in their eyes." Fuller's wife, Betty, put her hand on his and said gently, "It's time, Dick." Without looking up, he muttered, "All right, goddamn it, all in favor say aye." The vote was unanimous and hardly audible.

At Fuller's request, Hauberg became the museum's president. He doubled the size of the board, adding "young whippersnappers" to inject new spirit into the place, and launched a search for a director. In the next dozen years, museum executives would come and go with astonishing rapidity. Not until 1987 did Seattle find a candidate who suited the landscape. He is Jay Gates, former director of the Spencer Museum of Art at the University of Kansas, an art historian and educator, a man of invincible enthusiasm, with a touch of the cheerleader every modern museum can use.

If the place was not entirely moribund after Fuller's death in 1976, it suffered from nervous lassitude. For one year, beginning in 1978, while yet another search for a director was under way, the museum was actually run by the board president, Bagley Wright: investor, land developer, another mainstay of the cultural scene, and with his wife, Virginia, Seattle's premier collector of contemporary art. Every day on his lunch hour, Wright would drive over from his office to fulfill the acting director's duties. "I'm sure the museum wasn't well run on that basis," he says wryly, "but it didn't burn down and it didn't deteriorate. I learned a lot—not about museum management but about Japanese art, which is mostly what the museum had."

In fact, Richard Fuller had had a sophisticated appreciation for a broad range of art—he would come home from geological expeditions to Mexico, for example, with fine specimens of pre-Columbian work. But his eyes glazed over at much of the difficult art of his day if it had not been produced locally. "He took no interest in modern art at all, and there was no curatorial department here," says Virginia Wright.

AN AIR BAG IS ONLY AS GOOD AS THE CAR IT'S ATTACHED TO.

Air bags, Hugo Mellander believes, are giving people a false sense of security.

Mellander is head safety engineer for Volvo in Sweden.

"I don't think people realize an air bag is designed to work in conjunction with a seat belt and only in frontal impacts," says Mellander, "furthermore, frontal impacts account for only 36% of all accidents."

How will a car react the other 64% of the time? In side impacts (20% of all accidents)? In rear end collisions (7%)? Rollovers (12%)? Multiple impacts (17%)?

"These are the questions people should be asking," says Mellander.

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"The increased focus on safety by the car industry and the public pleases us," says Mellander.

"Now that people have their eyes open to the importance of safety," he adds, "they should understand the differences between how car companies approach safety."

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Seattle's new museum opens its doors

Mrs. Wright, whom all of Seattle seems to know as "Jinny," is now president of the museum board of trustees. Modern art has been her passion since the '50s when, just out of Barnard College, she went to work at the legendary Sidney Janis Gallery in New York and bought paintings on the installment plan. The Wrights have since assembled a prime collection—Jasper Johns, Robert Rauschenberg, Franz Kline—much of it promised to the museum.

To placate museum supporters who cared about new work, Fuller "sort of allowed" Jinny Wright to organize a Contemporary Arts Council. Its members booked shows from other museums and paid to install them in an old 1962 World's Fair building that the museum used for large touring exhibitions. When, in 1975, the council raised funds to hire a curator of modern art, the tide began to turn. Theoretically retired, Fuller was still a presence, still a voice that demanded attention. The new curator, Charles Cowles, a peppery, self-confident young man who is now a New York dealer, came to his first meeting of the collections committee seeking approval to acquire an Andy Warhol painting for which he already had the $35,000 asking price. "Dr. Fuller said no—it was too big," Cowles recalls. No one in the room dared disagree.

Cowles spent four weeks politicking committee members and at the next meeting proposed the same acquisition. "I said no last month," Fuller declared. "That's one 'no' vote," said the chairman, who proceeded to poll the rest of the committee. It approved the acquisition, and Fuller's attendance at meetings began to drop off. Cowles also lost friends by canceling SAM's venerable tradition of the Northwest Annual. "It was full of junk," he says.

Even before Cowles arrived, it was clear that the museum would have to expand, and that it could not happen on city parkland. By the late '70s, Seattle was growing at an almost alarming rate. National magazines regularly discovered its coastal and mountain beauties ("the most livable city in the U.S."), inspiring waves of new settlers. To this day, some birthright residents will quietly confess to an "obsessive hatred" for Californians, the most numerous of the late arrivals who have caused housing values to bloat and traffic to congest. Yet, Seattle engagingly preserves small-town manners. At any time of day, strollers may be seen retrieving rare pieces of discarded paper from the street for deposit in litter baskets; at 2 A.M., with not a car in sight, a pedestrian will be found standing at a curb, dutifully waiting for a green traffic signal.

Public art has became one of the surprises of the city. As recently as 1963, the American Association of Museums, preparing for an annual meeting in Seattle, warned its members to expect nothing in the way of outdoor monuments. This lapse was later remedied by a city requirement that 1 percent of the cost of new construction be spent for public art. In the past couple of decades, the Seattle Arts Commission has found more than 1,800 ways to brighten the urban landscape. Step on a manhole cover and you realize it bears a familiar emblem of the Tlingit tribal culture, native to the Northwest. Check a street clock for the hour and you discover that it is wittily positioned on top of a six-foot, slanted replica of a pendulum. Ride the new Metro system and you are surrounded by art.

Dedicated collectors buy art for art's sake

One reason Charles Cowles was able to cancel the Northwest Annual has been the growth in the number of serious galleries that show and sell work by both regional and big-city contemporary artists, and that actually stay open on Sundays for a sizable clientele. The number of dedicated Seattle collectors, however, is modest, and they are apt to be people with careful buying habits. Patterson Sims, who left the Whitney Museum in New York five years ago to become associate director and curator of modern art at SAM, noted a singular difference between the two cities: fewer people in Seattle buy art because owning it is fashionable.

Twelve years ago the obsessive buying habits of one collector suddenly made the museum's need for more space urgent. Katherine White, a recent arrival to the city, had settled in a house with her claustrophobic clutter of African sculpture, ceremonial objects, furniture, jewelry, baskets and textiles—2,000 pieces in all, a stellar accumulation acquired with knowledgeable zeal on trips to Africa and from dealers. A tall woman who liked to wear the wearables in her art, she had lived in Cleveland and Los Angeles, and had moved to Seattle intending to open her own public gallery.

Battling with cancer, in 1980 White offered the art

Arts of the Kwakwaka'wakw people (formerly the Kwakiutl) of the Northwest Coast include, at far right, an interior housepost and a group of dancing masks. Long-beaked mask is a mythological people-eating bird.

Japanese tea-ceremony wares include a porcelain saki ewer, raku teabowls, plates attributed to Ogata Ihei.

Pair of harps in the form of a female and male, from Zaire, were played by traveling musician-storytellers.

Director Jay Gates, at left, and architect Robert Venturi prepare for December's opening celebrations.

to the museum—at a price. It could have half the collection as a gift if it paid $2 million for the rest; she wanted an estate to leave to grown sons. A few influential citizens set out to persuade Seattle's major industry, the Boeing Company, to fund the purchase. It was a recession year; airplane orders were down, and Boeing workers had been laid off. Moreover, Boeing had never made so large a cultural gift. The company chairman decided that the museum could have the money if the source was kept secret. Until this year, much of the collection also remained secret. Lacking the space to show it, the old museum converted a large gallery into a storage room to house it.

The next piece of good fortune came the following year. The J. C. Penney Company was vacating its downtown store and decided it could use a tax deduction for contributing to a cultural cause. The museum accepted Penney's half-block and then decided the site was wrong for its needs. Through exchange and purchase, a more congenial property was found nearby.

Nobody welcomes new taxes, and in 1986 it was chancy persuading the Seattle electorate to approve a $29.6 million bond levy that would cover less than half the cost of a new museum. The project was shrewdly twinned with a proposal for sorely needed public housing—one vote for both. After a frantic grass-roots campaign, the bond levy passed with a fragile majority, barely 52 percent. The rest of the costs came from private contributions, a success that still surprises the people who helped find benefactors—4,000 donors who gave anywhere from $1 to $4.5 million. The campaign's professional fundraiser, Scott Charles, had calculated that they would be lucky to bank $21 million; they wound up with $32 million.

Seattle's new low-income housing was in place long before the museum was ready for its public. As Robert Venturi observes, the intricacies of building a shelter for art are not too different from the precision required to construct a fine watch. In fact, the intricacies proved greater than the building company had imagined when it bid $24 million for the contract. Before the museum was completed, the company asked for an additional $12 million for cost overruns, which it blamed on design flaws. The dispute is in mediation.

The building design, as always a collaboration of Venturi and Denise Scott Brown, his partner and wife, is their first completed project for a freestanding museum. In the Venturi canon, there is one overriding requirement for such an enterprise: "The building must be a work of art, but it cannot upstage the art."

Although Venturi dislikes being called the inventor of Postmodernism—a reach around and beyond the austere rigidities of 20th-century design dogma—he is surely its chief apostle. For a quarter of a century, this gentle, mild-mannered Philadelphian has argued for the kind of vigorous, complex, hybrid style that not only makes use of the past but acknowledges America's sturdy Main Street vernacular.

Building on a fairly modest plot in a district dominated by the aggressive high-rise quarters of corporate Seattle, the architects had to find ways to make a five-story structure appear at once important and friendly—a palace of art with an aura of welcome. Greeting parades around the top of the museum, proclaiming its name in letters 14 feet high. Both bold and subtle, this giant sign is incised into the gray limestone facade and alters through the day, sometimes almost vanishing, as the direction of the sunlight changes.

Lyrical homage to a childhood pleasure

The site is on a slope. Rather than ignore the terrain, the architects used it, designing a graceful, terraced, sidewalk stairway that runs the length of the building and is repeated in a grand staircase just inside. Of necessity, modern museums are built with unbroken walls to protect the art from daylight and climate. But windows, at least windows with transparent glass, imply a welcome, and this building has them at ground level. Moreover, they carry the building's color. Each is bordered by red granite; the granite is edged by a playful—Venturi prefers to call it "lyrical"—rim of brightly hued, glazed terra-cotta. The gleaming tiles are Venturi's homage to his childhood pleasure in the colors on the face of the Philadelphia Museum of Art; they

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are meant to appeal to children, possibly to the child in all of us.

On the gallery floors inside, wide asymmetrical corridors run the length of the building, with large windows opening onto Elliott Bay at one end and the urban landscape at the other. People gazing at art, Venturi observes, need to pause and reorient themselves. It is important to him that "you can look out the window and know where you are in the real world."

For the public area in front of SAM, the Seattle Arts Commission chose *Hammering Man* by Jonathan Borofsky, a $450,000 working-class symbol that seemed appropriate to the surroundings. Borofsky has designed similar pieces to order for other sites; this one, fashioned of black-painted steel, is a majestic sliver of a giant, 48 feet high, conspicuously positioned on the sidewalk rather than on a pedestal, and programmed to raise and lower its hammer four times a minute.

The sculpture was delivered two months before the museum's opening day, and as it was being lowered into place, a sling snapped and it fell to the street. Only the sculpture was injured. Currently being repaired at the Connecticut foundry where it was built, it will be in place by midsummer.

The feast of works inside has transformed the Seattle Art Museum from provincial institution—a cute little place—into something more imposing. Its exhibition space has tripled. The second floor is to be used for big special shows or traveling collections. Two other exhibition floors permanently display an impressive range of works from disparate periods and cultures hardly anybody remembered the museum embraced. Jay Gates is resolutely committed to art education, and each floor devoted to the permanent collection has a reference room stocked with books, videos and other educational materials.

Gates, a notably casual man, never refers to the place as anything but the "Seattle Art Museum" or "the museum" and is candid about his inability to reconcile himself to the popular local acronym. Whoever heard of a museum called SAM? But, as he mused one day before the big opening, he has to face the fact that the institution he now presides over may become widely known as "SAM Downtown" and "SAM-in-the-Park."

Works in the Seattle Art Museum's late 20th-century gallery are sculpture by George Segal, in foreground, and, from left, paintings by Frank Stella, Ellsworth Kelly, Mark Rothko and Helen Frankenthaler.

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By Timothy Foote

'That is not a bad dog—that's a splendid dog'

The one who saved Bandit from death and the coils of the law is a gifted writer and trainer named Vicki Hearne

Not since Mark Twain remarked that the difference between a dog and a man is that a dog never bites the hand that feeds him has the domestic dog, including the much maligned pit bull, had so provocative a champion as the fierce, fortyish animal trainer named Victoria Elizabeth Hearne.

Besides being a celebrated trainer, Hearne is a critically admired poet, novelist and (a few years back) author of a remarkable book called *Adam's Task*. In it, despite a tendency toward literary digression (at the drop of a hat she cites Xenophon, Plato or Ludwig Wittgenstein), Hearne bore enchanting witness to the intelligence, character and loyalty of dogs, and the possibilities of two-way communication between dogs and humans through formal training. Presented with considerable intellectual armor, these views put her at odds with all sorts of people: those who hold that dogs are mere creatures of stimulus and response, as well as legions of others (Hearne refers to them as "humaniacs") who have convinced themselves that animal training is cruel, that exercising physical authority over a dog or horse is the moral equivalent of fascism.

It is Hearne's dedication to the plight of pit bulls, however, that has made her anathema to enforcers of animal-control laws. After being called in as an expert at many dog (and owner) hearings, after reading lurid newspaper accounts of dog attacks and checking up on the actual facts, she found herself defending pit bulls, deploring both their condemnation as a breed and the overkill of canine-control laws being put in place to deal with "dangerous" dogs generally. Most of the charges against pit bulls and other dogs that are indiscriminately lumped with them she found false, and said so in the *New York Times* and *Harper's*. The breed is not afflicted with "Jekyll-Hyde syndrome," which, however gentle the dogs may seem, is supposed to make them a kind of furry time bomb ready to go off in the bosom of the family. The pit bull is not specially endowed with "double jaws" that allow it to bear down with its teeth for a more or less interminable bite at the oft-claimed pressure of 20,000 pounds per square inch.

What really drew Hearne into the pit bull wars was a dog named Bandit, condemned to death in Connecticut as "vicious," and labeled by the local press as "Public Enemy Number One." That battle is the subject of Hearne's latest book, which has launched her on the lecture circuit. Appropriately entitled *Bandit: Dossier of a Dangerous Dog*, it describes with partisan zeal how Bandit and Vicki and their friends struggled free, or almost free, from the coils of Connecticut's Canine Control Division.

Since meeting Bandit, Hearne has had telephone threats against her own dogs and has even needed police protection. She has been called an "intellectual redneck" and, a yet unkinder cut, the "Camille Paglia of canine politics." Of course Hearne has also become known as the "pit bull lady" and has been described both as the Joan of Arc and the Portia of pit bulls. She vastly prefers the latter: "Saint Joan was burned. Portia won her case with wit, and got to marry the fellow, too."

Dead set against "bribers" and "cooers"

Hearne herself is no slouch at brisk (though sometimes ill-advised) invective. More males than females are bitten by dogs, a fact that she attributes to the male need to dominate, rather than listen, as well as to "damage done by testosterone." She dismisses a canine-control operative as a "despicable little pseudomacho twerp." Plainly, any inquiring male reporter, especially a sentimentalist with a golden retriever, approaches such a subject with some caution.

If you want to see Vicki Hearne these days, you must journey past New Haven, Connecticut, to Westbrook, and turn left till you get to Silver Trails Animal Inn, owned by Vicki's friends and benefactors George and Lillian Bernard. The front office is small, cluttered with useful stuff like combs and flea sprays for sale, and the occasional mat emblazoned with the command "Smooch Your Pooch Today"—although Hearne has made it clear that she cannot abide the "bribers" and "cooers" of the dog-ownership world. Controlling a dog through bribery, she believes, stunts its intellectual and imaginative growth. Instead of concentrating on achievement, "all he thinks about is 'dog biscuit.' "

In book-cluttered home in Westbrook, Connecticut, Hearne works in bed, attended by Patrick Cat and a bossy pit bull named Annie, who tends to browbeat Bandit and the five other dogs in the household.

I am not a cooer. But my golden knows me for the briber I am, so it is with some trepidation that I push open another door in search of Ms. Hearne. Once inside, I am confronted by a woman in what looks like an all-purpose Winston Churchill suit, giving a dog a bath in a big blue wall tub. I have associated Vicki Hearne so thoroughly with Bandit, with pit bulls and with the bull breeds in general, that it is almost a shock to find her keeping company with a young Airedale. As we talk she gently brushes and soaps him, then administers a rinse-down with a flexible showerhead.

Airedales tend to be what trainers call "hard dogs," meaning dogs that are often hard to train, but once trained are unflappable yet intense at whatever work or play they do. Airedales also turn out to be Hearne's favorite dogs, partly because they are big terriers and she has a weakness for terriers. German shepherds, she has noted, especially those trained to be "alert" to

Photographs by Enrico Ferorelli

Working in snow, Hearne gives "search" command to Drummer, an Airedale who is one of her top dogs.

misdeeds, can be ruined by having to sit by and do nothing about someone, like a malefactor, who is flagrantly out of place. Hearne describes shepherds as "experts in the game of 'What's wrong with this picture?' " Airedales take a sportier approach to life. As long as there is work in view in which they will be able to show off their skills, they are happy.

True pit bulls are a sort of terrier, their formal American Kennel Club (AKC) title being American Staffordshire terriers, not to be confused with bull terriers like the female dog who plays Spuds MacKenzie (a male) on TV, or with mug-faced bulldogs like Yale mascot Handsome Dan. Along with many officially "vicious" dogs in recent years, Bandit had been loosely described as a pit bull, but when Hearne met him she instantly saw that he was an American bulldog, probably of murky antecedents but clearly with immense dignity. "Even in the most bulldoggy [pit bulls]," she writes about that first encounter, "there is something—a sprightliness in the stance, some suggestion of the possibilities of tap dancing and vaudeville, some impish gleam of the eye—to suggest the terrier." And she adds, "There was no terrier in this guy, [only] stalwartness."

The wet Airedale is named Texas. When he's rinsed down he's supposed to get his collar put on. But when he dodges, instead of the high-level discipline one has been led by her detractors to believe that she would employ, all Hearne says—in a chirpy, low-key but upbeat clarinet tone—is "Texas, that's not how to do it." Texas obediently puts his head forward in the proper way and is lifted down to the floor. "Kennel up," she says in the same voice. He zips into an anteroom where there is a row of wire kennels, pops into one, spins around and puts his nose forward as if to leave again. She clangs the wire door and expertly hooks a hot-air tube to the cage so he won't catch cold.

Texas is full of vim and vigor, a young dog impatient to move faster, and he is more of a natural cutup, and in some ways sloppier, than Hearne normally permits. "I feel about him," she says "the way Twain described somebody: 'He'll be president some day—if they don't hang him first.' "

Next door to Texas, and now released, is Drummer, a much larger Airedale she uses for obedience and search-and-rescue trials. Hearne feels that people and dogs have songs to sing—yes, she does talk that way. One of Drummer's songs, I learn, is "I am Drummer, King of the Kennel." But he has been known to lapse into more plaintive lays, among them: "Vicki, I am Drummer. We're a team. Why are you doing things with that crazy little dog Texas? He couldn't find a bear in a telephone booth."

Texas may one day push him, but Drummer is her number one public dog. The "heels" and "sits" he does are just warm-up exercises for advanced work, like a ballet dancer limbering up at the bar. She tries to keep such commands to a minimum, even in the formal training of a new dog. "Telling a dog to sit," she says, "becomes boring for the dog, and for you. The differ-

Timothy Foote, a Board Editor, last wrote about the Europe that launched Columbus (December 1991).

In the sprightliness of Airedales, she says, there is some suggestion of "tap dancing and vaudeville."

ence between commanding a dog to sit and commanding him to retrieve or negotiate obstacles is like the difference between requiring mannerly behavior in a classroom and commanding the students to draw a picture or write a poem. The picture or the poem belongs to the artist, no matter who commissioned it, and some dogs are more insistent on this aspect than others."

When she first met Bandit she did not know what work he would be good at, what song he had to sing. It turned out that he sang for obstacles to be surmounted—boulders, high tractor seats, even ladders "and all else," she writes, that is "aptly and splendidly climbable." But that knowledge came only near the end of Bandit's story, an illuminating case history in the pit bull wars and a moral tale—as all classic dog stories should be.

Once upon a time Bandit belonged to a courtly man named Lamon Redd, 76 years old, a retired steelworker who lived on the rents from rooms in his house and an identical one beside it, on Henry Street in Stamford, Connecticut. What Bandit mostly did was sit on the front stoop beside Redd and keep track of the neighborhood. A time came when the girlfriend of a tenant, coming in after midnight, stepped on Bandit in the dark and got a nip from him. But Bandit had no real trouble until the steamy July day in 1987 when one of Redd's male renters was set upon by the outraged mother of a girl he had been quarreling with. She chased him down the driveway between the two houses, yelling and hitting at him with a broom. The drive was Bandit's responsibility; besides, the young man often fed him and took him for walks. Bandit bit the woman.

For centuries under common law, dogs have been allowed a bite or two if the bite occurs in the defense of master or property, or after the dog has been flagrantly tormented. In most places they still are. But because of the public terror of pit bulls generated since the mid-1980s, in a number of localities (whole states like Washington, Ohio and Connecticut, counties like San Mateo in California, cities like Los Angeles) canine-control departments have been granted largely unchallengeable authority to take whatever measures they deem necessary to deal with "vicious" dogs, and enormous leeway in deciding if a dog is dangerous in the first place. In some extreme cases, a single unsubstantiated complaint that a dog "approached" a child in a "threatening" way can result in the death of the dog or the punishment that now fell on Lamon Redd.

Bandit was taken away. To get his dog back and to keep him from being destroyed, Redd was told, he would have to build a chain link fence around his property, six feet high, and (though Bandit had lived indoors) put a doghouse in his yard. Many dog owners, already intimidated, can't comply with such demands. But in the weeks that Bandit stayed on death row in the pound, Redd spent $4,000 to have the work done.

Whether or not the dog was teased or beaten while he was in custody, as Vicki Hearne suspects, is open to question. But once back in Henry Street he forgot his manners and relieved himself on the stoop, something he'd never done before. The second time this happened, Redd "whupped him and whupped him." And finally Bandit bit his master in the whupping hand, 16 stitches' worth. This occurred inside the fence and was no danger to the public. But the Stamford Canine Control Division heard, picked up the dog and ordered him put down.

Bandit stands accused

Redd blamed himself: "He notified me—'*grrrr, grrrr*'—but I kept whupping him." So Redd hired a lawyer. In November 1987, Vicki Hearne got involved in the case, first as an expert in dog behavior, then as a plaintiff. Canine Control took the position that Bandit was a biter and a vicious dog. He must be put down. Vicki argued that Bandit, on the record, basically was not a bad dog but a "splendid" dog who could be safely restored to his owner and society by training.

After an appeal hearing upheld the original disposal

order. Bandit seemed marked for death. But at a further hearing, over bitter protest by Canine Control, a Superior Court judge gave Vicki Hearne custody of Bandit and three months to work with him to see if he could be trained. If he failed he was a dead dog.

In "How to Say 'Fetch!' " one of the remarkable chapters in *Adam's Task*, Hearne notes that one task the biblical Adam had was to name the animals, and suggests that a dog's mind and sense of responsibility expand as his name is linked to commands he can follow. It is the task of every dog trainer and dog owner to expand that dog's name, and sense of what he is, through coherent commands. "Coherence" is one of her touchstone words, for it denotes what dogs need more than anything else and what is notably lacking in the modern world.

A dog consistently called Bandit knows that he is Bandit. If he has been taught to sit properly, enduring distractions that a trainer introduces, his name and his sense of himself get broader. Now his name is "Bandit Sit," and he thinks of himself in some way that resembles the anthropomorphic phrase "I am Bandit who sits in majesty, ignoring robins and squirrels the way Mount Everest ignores fleas." And so on, through "fetch" and other character-building intellectual challenges. It was by just this kind of hard work that Bandit began acquiring a bigger name for himself.

Hearne's training program is based on the assumption that dogs are far quicker than humans at keeping track of the world as it affects them. That and joy in partnership, she feels, are their main motivations. Her aim is to put the animal into situations where it knows what to do and does it, not as a conditioned reflex but because it has made a decision to do so. Otherwise the dog isn't really trained. With Bandit, as with other dogs, she began with three weeks of rambling around at Silver Trails, never giving a command, attached to him by a 20-foot longe (pronounced LUNGE) line. Whenever he'd dash on ahead, she'd head the other way suddenly, with her whole body, and bring him up short.

This continued until he knew he could count on her to do it and began to watch her carefully. In three weeks he was walking companionably beside her, with no pulling and in something like the "heel" position. Why? Because it was close and "a good position from which to keep track of what I was doing," she explains. Besides, as they walked together, the feeling of comradeship grew. Then she taught him what she calls the grammar of their language education, the traditional commands: "sit, stay, down, come, stand stay, down stay and OK," carefully positioning him each time until she was sure he knew what was wanted. Though her aim always is off-lead control, the grammar has to be taught on-lead. She regards "OK" as the most important command because it releases a dog temporarily from work or unleashes it for something it wants, yet reminds the dog that work is formal.

Rewards were smiles, hugs, praise, but no tidbits! And no "punishment," in which she includes anything done in anger—nagging, shouting, jerking a dog around

Drummer does warm-up jump, undistracted by presence under the bar of Cardigan Welsh corgi named Gaddis. Man at right is George Bernard, owner of Silver Trails, who took Bandit in when the dog would have been unwelcome elsewhere.

Shown smaller than actual size of 8 1/4".

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and, of course, beating—which can ruin a dog. She distinguishes between punishment, which she hates, and reinforced commands, which she uses sparingly but thinks crucial. A "sharp, two-handed jerk of the training lead performed impersonally is a command," she says. Even doing that (an action that can look pretty choky to a sentimental bystander) can be a disaster unless the dog knows what it is expected to do. Most biting, she feels, "is a response to incoherent authority."

Bandit had had some training, and she found him to be one of the smartest dogs she'd ever met. With every dog, including Bandit, the great training breakthrough occurs when the dog realizes that, in fact, it's not the leash that is controlling where he is but his decision about how to deal with it. To make this clear, in the final stages of lead training she uses a hundred feet of very light line (a fishing line will sometimes do) and, after a number of commands, walks ahead of the dog and drops the lead for him to see.

Flying tennis balls did not distract him

Bandit had no zeal for retrieving and, perhaps because of that, turned out to be a Rock of Gibraltar on the "stand stay" routine. Flying tennis balls and other things introduced to distract him, which would have driven a terrier or a retriever wild, he simply disdained. Yet he doggedly learned to fetch all sorts of things, especially when they were put in high-up and hard-to-get-to places. At his favorite command, "up," he would relentlessly, joyfully, scramble up onto tractor seats and great boulders. He even learned to climb a ten-foot aluminum ladder into Hearne's barn.

Just before the three-month grace period was up, Bandit went with Vicki to a park where a number of dogs were gathered to be evaluated by judges from the American Temperament Testing Society, a group that assesses the stability or character of dogs. Children and assorted other distractions were around, and the judges did weird things to Bandit, like leaping out from behind a barrier, shoving an open umbrella in his face, wearing sheets over their heads, shouting and waving their arms. One fired off a gun. Bandit was properly imperturbable and got high marks.

The court order had called for an evaluation by Canine Control. Vicki suggested a crowded day at the New Haven town green, a place with plenty of activity to stir up an inveterate biter. Canine Control wanted to test Bandit without Vicki present "by re-creating the [original] situation," says state Canine Control director Frank Intino. She felt the dog had been teased and beaten in their custody before, so she refused. Because the case was by then famous, they agreed to let Bandit live without giving him any evaluation. But in Connecticut he could not go in public without a muzzle, and he could not go back to his old master, Lamon Redd.

Bandit sits in front of State House in Hartford, where he was tried. A muzzle is still required in public.

These days Bandit lives in custody with Vicki and her husband, Robert Tragesser, a philosophy professor at Barnard who happily has grown philosophic about dogs. Also in residence in a smallish house filled with books and computers are three cats and seven dogs, including two pit bulls, two Airedales, a Border collie and a Plott hound. She reports that Bandit lets himself be thoroughly browbeaten by a pit bull bitch named Annie—who wants what she wants when she wants it and has been known to interrupt Hearne by jumping on the computer keyboard. Bandit, by contrast, whom Hearne describes as "terribly black tie," waits politely, except when, if his need is truly pressing, he heads off

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Though covered with soap, Bandit cuddles up to Vicki during his bath at Silver Trails kennel. The leash is a standard safety device used in raised wall tubs, to be sure dogs don't jump out and hurt themselves.

to enlist Tragesser's aid in stirring her into a walk.

The victory of Vicki and Bandit is edged with sadness. Lamon Redd, grown older, has come to feel that Vicki has stolen his dog. Vicki regrets that Redd and Bandit have lost each other. She also frets that, because of the muzzle, Bandit cannot compete in obedience trials in Connecticut where, she knows from long experience, he would certainly achieve the title of "Companion Dog Excellent."

Not every dog in trouble can get three months of attention from a celebrated trainer, particularly not one who is also so articulate and cantankerous in pursuit of what she takes to be justice. Hearne has always been troubled by the gap that exists between the language and knowledge of dog training and the unknowing yet patronizing attitudes of animal behaviorists and psychologists in the academic world. Like many other trainers, she uses morally loaded words like "courage," "comradeship," "commitment," even "nobility."

To some—by no means all—scientists, such language smacks of (good grief!) anthropomorphism. If dogs are merely creatures of instinct and conditioned reflex, how can you speak of them as having thoughts and emotions? "Heroic" dogs clearly don't literally say, "If I jump into these rapids to save this baby I may drown"—and then jump at their own peril. Yet anyone who knows dogs well has seen them undergo brief moments of indecision of that kind, and then, having made the equivalent of a moral decision, launch into a courageous act, apparently as a result of something more intricate than contrary pulls of blindly opposed instincts.

Human attitudes toward dogs and dog training, the two things that concern Hearne most, are clearly crucial in dealing with dog biting, and with the plight of dogs and dog owners in the United States. Because of sloppy and greedy breeding methods, all kinds of dogs are sometimes less stable than dogs of their breed used to be; there is such a thing in dogdom, for example, as "spaniel rage." But as most dogs still are reasonable, they usually bite out of fear, often the result of the way they have been treated, especially from age 5 weeks to 9 weeks. What affects them most, however, is how they have been trained or not trained.

Because of fear of crime in cities, there are more poorly trained big dogs, whose bites are likely to cause enough damage to produce demonizing headlines. Dog bites can be dreadful, traumatic, occasionally deadly. And obviously there are now a number of really bad guys with really dangerous dogs around. The new canine-control laws seem mainly designed to deal with such worst-case scenarios. But mandating cyclone fences, slapping felony charges on owners, and killing dogs, though encouraging some sort of owner responsibility, won't cure the problem. Meanwhile, inflexible and intimidating machinery is in place, often producing a good deal of unnecessary litigation, owner anguish and canine death.

Because of Bandit, news of dogs and owners in trouble reaches Vicki Hearne every day. She has some 40 dog clients and is committed to a heavy training schedule in the afternoon. So these days, in order to have time to write, she gets up at 4 A.M. and works undisturbed until 8. About 9, her fax machine stirs to life and her phone begins to ring. With their dogs at

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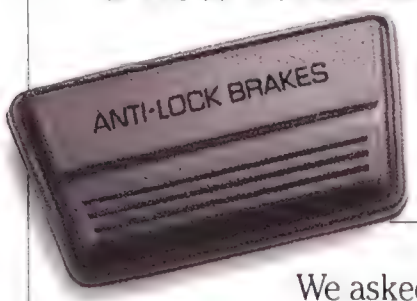

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death's door, bewildered people are getting in touch with her from all over the country, and even from places like Norway, England and Singapore, where some breeds of dogs have recently been banned.

Hearne is a collector of horror stories: dogs whose teeth were pulled so they could stay alive; a well-trained pit bull shot by police while dutifully in the "sit" position. In England, a woman who had agreed to have her dog put down did so, and then on her way home committed suicide in her car. A schoolgirl in Norway, where pit bulls have not only been banned as a breed but labeled "bastard" dogs, was taunted by schoolmates, and her dog-trainer mother threatened by toughs because she has so far refused to get rid of their well-mannered beast. Hearne researched the dog's antecedents in the United States and sent an affidavit that the "bastard" dog had proper bloodlines going back to the turn of the century. In California, after pit bull panic set in, hundreds of pit bull terrier owners—in fear of arrest, attack or lawsuit—turned in their dogs at animal shelters, asking to have their pets destroyed.

Hearne recently traveled on the West Coast to promote her book and address dog groups in the San Francisco area. In California some of the harshest terms of the pit bull scare laws have been modified. Dogs generally no longer stand accused of viciousness simply because of their breed. In some places, too, the review panel for accused dogs no longer includes the canine-control people who grabbed the dog in the first place. Even so, Hearne found many dogs in unnecessary trouble and owners in distress. In an unprecedented coalition, owners have got together to provide, via hot line, the names of lawyers who will take dog cases, as well as a list of nationally known dog-behavior experts qualified to evaluate individual dogs. "A lot of people wanted these laws," says Hearne. "They thought it would all be about Colombian drug dealers and young toughs who feed their dogs gunpowder and fight them, not Aunt Millie's high-strung golden in the suburbs."

Tougher training and "off-lead" tests

Some attempts have been made by the dog world to provide more dog training. The American Kennel Club, not every dog person's favorite organization (a well-known dog journal runs a regular monthly watch on AKC iniquities), has launched a small national program for dogs and owners called the Canine Good Citizenship Award, thus far notably underfunded.

Needless to say, Hearne agrees about the need for training. Needless to say, she has more exacting ideas about how tough things should be. "The tests are all on-lead," she says. "They ought to be off-lead. And harder, as hard as the AKC Companion Dog obedience test. After all, people deserve some serious guarantee that with a dog around, it isn't going to cause trouble." Since you can't force people to do anything in the United States, she thinks any broad training program needs to provide an incentive. If you and your dog really train, you should be privileged in some way, by having earned the right to move freely in public, perhaps in restaurants or parks. "All Canine Good Citizenship does is give you a piece of paper."

Dogs, well-behaved dogs, used to go into restaurants and stores. In Europe they still do. But the American way is that if any dog misbehaves, all dogs are banned. " 'No Dogs Allowed' signs are up everywhere. They're locked out. There's hardly a place anymore," Hearne says, "where you can go with a dog or train a dog. That's one reason why people don't do it."

She thinks a national campaign might be organized around local groups, with mostly amateur trainers and programs in schools, perhaps with promotional TV coverage to encourage participation. "If you passed the test, and local restaurateurs agreed, your well-trained, street-sound dog could come into a restaurant with you and curl up quietly beside your chair. And people, in-

Hearne and husband, Robert Tragesser, a professor of philosophy, take wintry tramp with some family dogs.

stead of freaking out, would get used to the idea again of a dog in a restaurant. Local merchants might extend the privilege to the well-trained dog. It would have to be a neighborhood thing."

Earning a privilege through self-discipline and work? Denying the same privilege to those who won't or can't make the same effort? Insisting that "absolute obedience" in a coherent system of instruction "confers nobility, character and dignity?" In all sorts of ways Vicki Hearne is downright subversive. Only occasionally does she insist on the larger application of what she has learned from dogs and dog training, and clearly wants the country to give a thought to: the importance of care and coherence in society, the supreme value of challenge and response. In her way, she is like Merlin in T. H. White's *The Sword in the Stone*, who tried to teach young Arthur about Man, nature and even politics by letting him briefly be part of the animal world.

Meanwhile, clients keep coming to Silver Trails with their dogs to train, paying, as Hearne wryly puts it, "to let me abuse them." Just before I left, a woman appeared with a little black dog known as a Schipperke, pointy-eared and with forelegs as delicate as a trout rod. The dog's name was Iago. Before Hearne emerged, his owner began giving him "heel" and "sit" commands. Mostly he did as she asked, but in a lackadaisical way.

Vicki took him over with her commanding chirp "Iago, heel," and a firm hand on the chain collar. Iago moved precisely, sat frozen like a piece of porcelain. His pleased owner said, a bit defensively, "He was doing it that way at home this morning."

Said Hearne with only a slightly indulgent smile, "I'm afraid he's got your number."

Iago's owner replied with spirit, "*He'll* have to change *that*."

"No," said Victoria Elizabeth Hearne. "*You'll* have to change that."

As I left them I thought of Hearne's theory of practically everything: in the Garden of Eden every animal obeyed Man willingly. But we blew it, and after the Fall all the animals lived as they pleased and paid us no heed. Except for dogs, who liked comradeship and loyalty enough to give us another chance. With a little help from their friends, they are still at it.

From left: Border collie Kep; Airedales Texas and Drummer; Plott hound Lucy Belle; Rosie, a pit bull.

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By Michael H. Robinson

An ancient arms race shows no sign of letting up

Our own race between offense and defense may be slowing for now, but for all other species the escalation of predator and prey never stops

The arms race that has darkened our century with fear and peril may finally be slowing. Weapons have been with us a long time. From personal combat at the very beginning of history to the impersonality of modern warfare, there has been a dynamic escalation in the complexity and specialization of attack and defense. From hand weapons and shields to ballistic missiles and Star Wars, offensive and defensive armaments have coevolved.

While arms races have been with us for millennia, nothing compares to the wasteful absorption of human talents and the costs in lives, talents, resources and energy of the past 50 years of war, pseudowar and escalation in deterrence by mutually assured destruction. This has been the killing century. Seventy-five thousand deaths in one day is a scale of slaughter unknown before 1945.

But as we reflect on the linked interdependence of attack and defense in our century, we need to remember that life on Earth has been involved in a biological arms race for hundreds of millions of years. Compared with that ancient process, the military arms race is but a blink in the eye of history. For a very brief period before the killing started billions of years ago, there was "innocence." At life's beginning the very first prot-

Big cats like the tiger roar to unnerve their prey; smaller cats (page 82) hiss to intimidate their enemies.

organisms, formed in the "primordial soup," obtained their energy from inorganic sources. They were autotrophs, using sunlight or geothermal energy sources to make their food, rather than finding and consuming it. Once living things existed, however, some became food sources for others. Life came to eat life, and attack and defense originated on Earth.

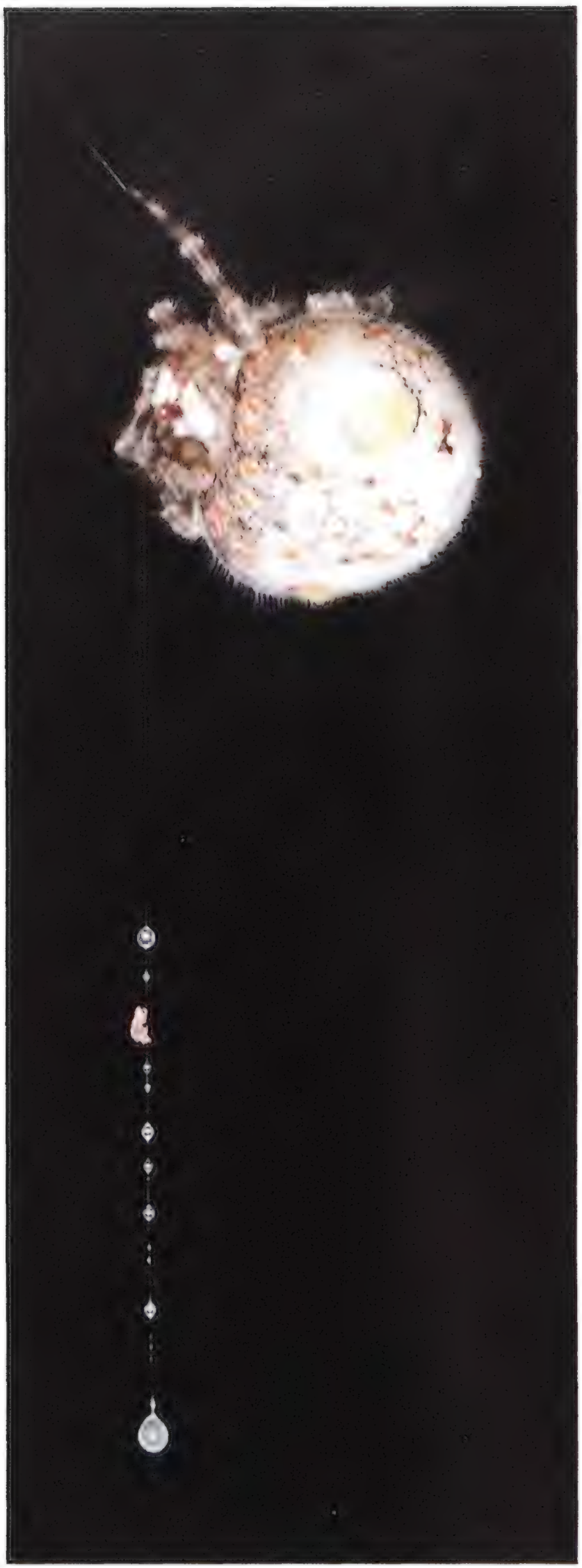
Most of my life as a scientist has been passed in studying the adaptations of animals for attack and defense. As a graduate student, I carried out research on the defensive behaviors of stick- and leaf-mimicking insects. This led inexorably to a study of the predators that eat them; a widening interest in the relationships between predators and prey, parasites and hosts; and an appreciation of the survival interactions between species.

My scientific interests were complemented by a childhood lived in close proximity to the air war of World War II. The Battle of Britain was a daily scorecard on the BBC's *Six O'Clock News*. The blitz was disturbingly sensual for me; sirens at night and smoke rising from Liverpool's docklands. Since then I have come to a direct awareness of the cross-connections between the biological arms race and the central events of our century. This is not to imply a militaristic attitude or some kind of biological sadism: there is no cruelty in the natural world, only reality. Predators are not mean—just hungry. Prey animals are not innocent—just intent on survival.

Not in the animal's interest to die

Both predation and aggression lead to biological arms races, but there is a very considerable difference. Many biologists argue that the term "aggression" should be restricted to conflicts within a species. This means fighting over resources, territories, nest sites, mates and so on. Predation is simply one species feeding on another. Death is the objective of the predator, survival the objective of the prospective prey. Aggression, as defined above, is very different. It is in no animal's interest to die for the resources it needs for propagation. The dead can't breed. So, in the course of evolution, intraspecific animal aggression has been channeled into conventionalized combat. Rituals minimize lethality. Human warfare does not necessarily resemble animal aggression. Although it occurs within one species, it has not, historically, involved devices that prevent killing. In fact, in its tendency to bloody slaughter, it resembles animal predation more than animal aggression.

An arms race implies a dynamism between attack and defense. One of the best places to study both sides of the biological arms race is in the rain forests of the tropics. There are more species of animals and plants there than anywhere else on Earth; as a consequence,



In Australia a spider known as "the magnificent" drops its baited trap line along a trail where insects pass.

the struggles to survive are complex and intense, the specializations are many. Take, for instance, the complexities of attack. In Panama, where I was engaged in research for nearly 20 years, one can see the fishing bat, *Noctilio leporinus*, at work over the waters of the Canal. Bats are well known as insect catchers; some bats eat fruit, others catch frogs, but catching fish is a really improbable specialization. Birds that swoop on fish, such as kingfishers and frigate birds, have long spearlike or hooklike bills, but bats have only mammalian mouths and very short noses. Birds spot fishes with their eyes, but bats fly at night. So, to be a fisher, a bat needs a fish detector and a hook. Its echolocation has become specialized to detect ripples and waves on the water surface, the telltale signs of fish cruising close to the surface; a parallel to the military use of down-looking radar is apposite. Once a fish is targeted, the bat sweeps close to the surface and gaffs the fish with enlarged claws on its hind feet.

Predatory animals, attackers in a military sense, have evolved elegant weapons and unusual prey-detection devices. But in human terms an arms race implies a stepwise development of attack and defense. This is also certainly true of predator-prey relationships in the natural world, but on a vastly different time scale. The evolution of human weapons has always been faster than its biological counterpart. Between 1939 and 1945, for instance, we saw the evolution of airplanes through a whole series of design stages. Following the changes in that Battle of Britain defender, the beautiful Spitfire fighter, from version Mk I to F 21, is like watching evolution in action. The changes were profound enough that if they had been described by a classifying biologist, Spitfire F 21 would have had to be identified as a new species. To complete the parallel, similar changes occurred in combatants' powers of perception.

From the naked eye to radar, and more

Pilots, for instance, started the war using their unaided vision to detect enemy aircraft. They ended it with radar to enhance their perceptions and with complex radio-based systems to aid their navigation. All this military change took place in a fraction of a human life span, whereas changes in the animal world normally take much, much longer. We have to infer stages in the natural arms race from the continued existence of forms that look intermediate. The animal equivalents of prototypes sometimes linger on, diminished in distribution but not necessarily doomed to extinction.

One aspect of warfare that resounded with drama and innovation in World War II was the struggle at night between attacking bombers and defenders on land and in the air. The war started with the assumption by the Luftwaffe high command that fast bomb-

A seemingly camouflaged flower spider is visible to its intended prey—but not to its own predators.

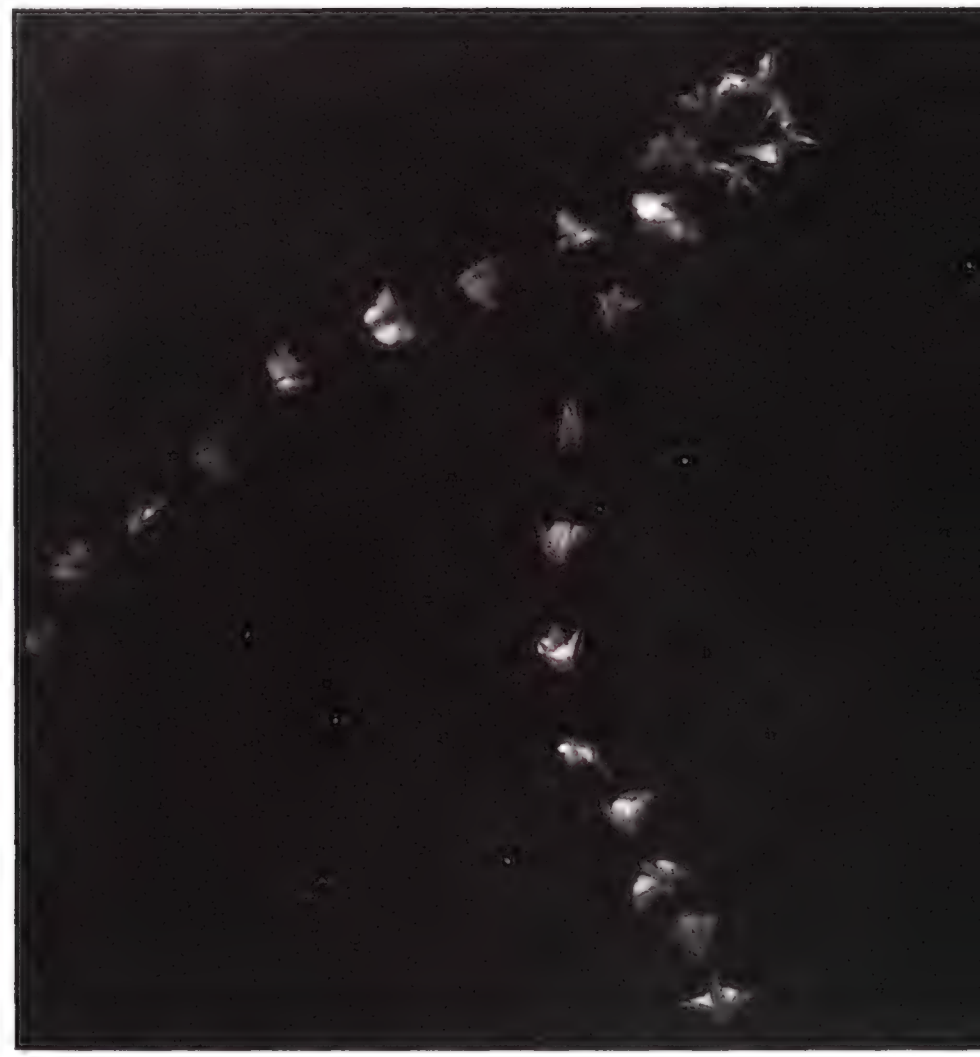
Like a fisherman with a cast net, ogre-faced spider holds a geometric trap with the ends of its feet.

ers, equipped with little or no defensive armament, could get through enemy defenses by day. The air battles of the civil war in Spain seemed to confirm this. Then, dramatically, the Battle of Britain proved otherwise. Since Spain, fighters had evolved and Britain had operational ground-based radar in place to detect the approach of enemy airfleets at a distance (SMITHSONIAN, July 1990). This increase in defensive capability and efficiency accelerated the arms race. It was an exact analogy to predator-prey interactions. German bombers, designed to be diurnal, became nocturnal. Alternatively, on a smaller scale, fighters were stripped down and adapted for the delivery of small "nuisance bombs" in hit-and-run daylight raids. After the blitz on Britain fizzled out, national roles were reversed: attackers became defenders, and night bombing became a major part of the Allies' attack on Germany. The Royal Air Force eventually mounted thousand-bomber raids on German cities. In *Slaughterhouse 5* Kurt Vonnegut vividly portrays the bombings of Dresden in which a hundred thousand people died.

Moths and their predators are in an arms race that started millions of years before the Wright brothers made the Dresden raids possible. Butterflies exploit the day, but their "sisters" the moths dominate the insects' share of the night skies. Few vertebrates conquered night flying. Only a small fraction of bird species, mostly owls and goatsuckers, made the transition. Bats, of course, made it their realm. Many species of bats are skilled "moth-ers": they pursue them at speed after detecting them with their highly attuned echolocation system. Some moths, however, have developed "ears" capable of detecting the bat's ultrasonic cries. When they hear a bat coming, the moths take evasive action, including dropping below the bat's track. The parallels of the response of Allied bombers to the radar used by the Germans in World War II are interesting. If we visualize the bombers as the moths, and radars on the ground and in the night-fighter aircraft as bats (a reversal of sizes), the situation is similar. Bombers used rearward-listening radar to detect enemy night fighters. When they detected a fighter, they took evasive action. But heavy bombers, heavily laden, were not very maneuverable. They couldn't dodge about quite as well as moths. Some pilots tried to drop their aircraft into a precipitous dive. Moths also do this; it is easy for them to fold their wings and drop. The next stage in the night-battle escalation is predictable. The night fighter's radar was eventually tuned to detect the bomber's fighter-detector, and thus the bomber itself. Bats have not yet tuned in on moths' ears.

Bombers also used technological disruption. Night fighters came to be guided to bombers by long-distance radars on the ground. The fighters started winning. But nothing remains static. The ground radars could be jammed by various kinds of radio noise. The technological battle swung the other way. Then the fighters acquired radar. Much like a bat, a fighter emitted and

A tropical biologist who has directed the National Zoo since 1984, Michael Robinson has studied the ways of predator and prey in more than 20 countries.



listened to radar signals of its own. These, too, proved to be susceptible to countermeasures, however. The RAF could jam the fighters' radar or "clutter" it with strips of aluminum foil. Each bomber in a formation dropped one thousand-strip bundle per minute, so that huge clouds of foil foiled the radar. Amazingly, there may be a similar counterweapon among moths. Some moths can produce ultrasonic sounds that fall within the bats' audio frequency. The moths' voice boxes are paired, one on each side of the thorax; double voices must be particularly confusing. Alien sounds in their waveband could confound the bats, exactly in the same way the foil confounded the fighters.

The next steps in the bat-versus-moth war may simply be awaiting discovery by some bright researcher; after all, we did not know a lot about echolocation in bats until after World War II. My guess would be that the detector will get more complex to meet the defenses. This may already have happened; bats specializing in moths with ears may have moved to a higher frequency sound outside the moths' hearing range!

As a dedicated spider fanatic, I find the battle between moths and spiders even more fascinating. Web-building spiders possess incredibly sensitive vibration receptors. Working a web by night is just the same as working one by day. Eyes are not involved. Moths fill the night skies with potential spider food. They fly through forest gaps that spiders can "fish" with their webs, and they are loaded with the proteins, fats and carbohydrates spiders need for reproduction. They cannot see to avoid webs in the dark.

Moths resemble butterflies in having wings that are proportionately large in relation to body length. This great surface for adhesion should make moths eminently trappable. Moths, however, can escape from the glue on spiderwebs. Their huge wings are covered with loose scales; magnified, these look like tiles on a roof.

The scales detach rather easily from most moth wings. When a moth blunders into or even brushes against sticky spider silk, the scales pull off from the wing and stick to the web. The moth may slip free.

The escalation by spiders in response to the nonstick moths can be seen both in behavior and web structure. Weapon number one is the attack phase of the spider's behavior. Orbweaver spiders seem to reserve a special attack strategy for moths. They have a "taxonomic sense" that enables them to distinguish between stuck moths and other insects. Moths are attacked instantly and seized in the jaws. At the moment of the bite, the spider restrains the moth in a cage of folded legs. Nevertheless, many moths escape before the spider gets to them. If you find a hole in a web encircled with moth scales, and no food in the spider's jaws, score another escape. (By contrast, many species of spider attack less-escape-prone insects by enswathing them in silk, a much less risky form of attack than the intimate bite.)

Another countermeasure is the web itself. For instance, there are spiders that build vertical "skyscraper" webs, more than 200 times their own size, specifically to trap moths. These webs work by capitalizing on the obstruction-avoidance behavior of insects. Watch insects hit a windowpane and you will see them flutter up or down in an attempt to fly under or over the obstacle. When a moth hits a skyscraper web, there is a great sticky height to flutter against. Each touch removes more wing scales, until the wings are essentially bald and the moth is captured.

In a multiple exposure at left, a flying moth detects an oncoming greater horseshoe bat and suddenly drops down, an evasive maneuver familiar to World War II bomber pilots. Above, a fishing bat has detected the ripples of a passing fish and swoops down to hook it with special talons on its feet. The echolocation being used is comparable to down-looking radar.

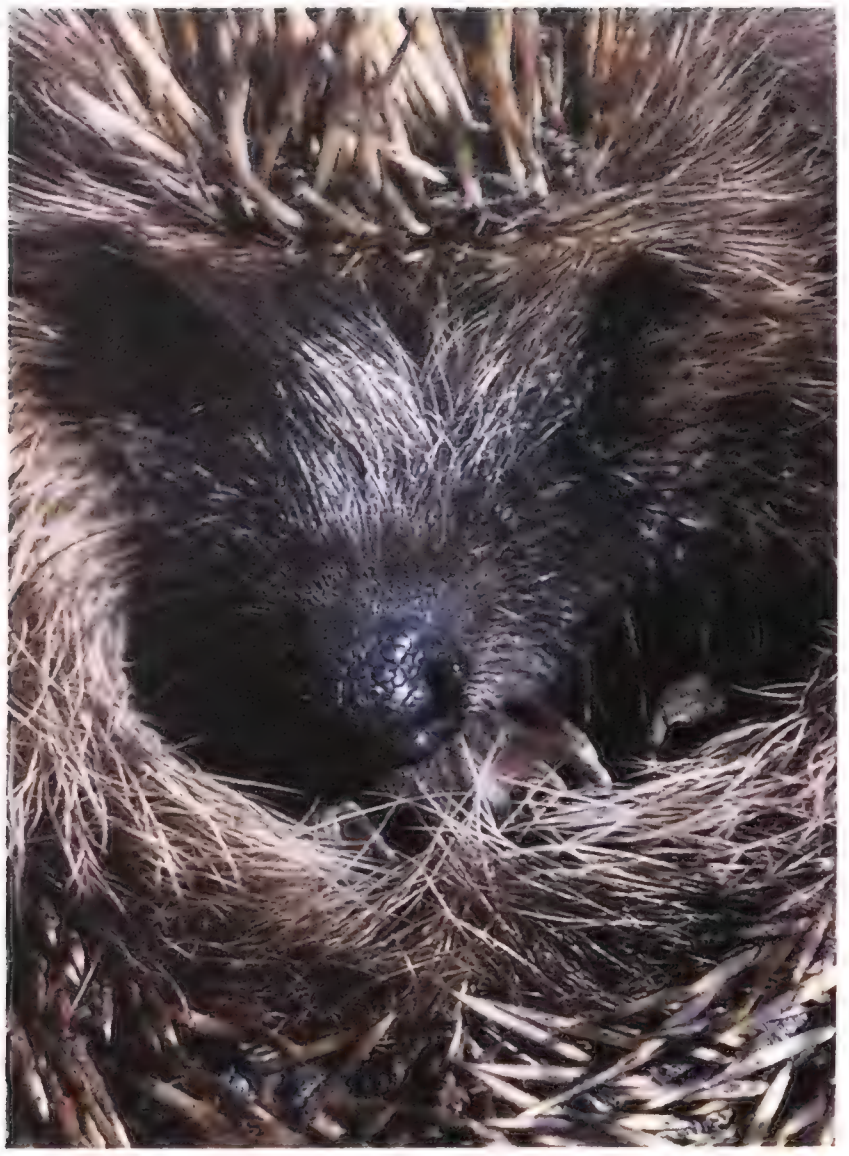
The ultimate in this escalating arms race between spiders and moths is the use of a lure. There are spiders that lure male moths to their doom with an odor love song. Because moths live in a dark world, mate-finding is a problem. So they often rely on odor trails in the air. Female moths sit in one place and broadcast an "I am here" message with perfumes, or pheromones. The so-called bolas spiders, orbweavers by family, have tuned in on the love channel and mimic the sex attractants of the moths. Male moths pick up the scent and fly to their doom. The bolas spiders spin a short thread of silk bearing one or two drops of a superglue. They use this nonweb to catch the seduced moths.

I have been describing active strategies by predators and prey, but passive defense and protection have also been a longstanding complement of warfare, human and otherwise. Shields paralleled swords in their evolution. Protective walls around human habitations, from hut villages to cities, extend over the millennia. The walls of Jericho date from at least 9,000 years before the present, whether they came tumbling down or not. A recent commentator has claimed that until about A.D. 1650, more resources were invested in defensive walls than in all other public works combined. Even very early combat armor, in the form of locked shields in the Roman phalanx, played a significant defensive role.

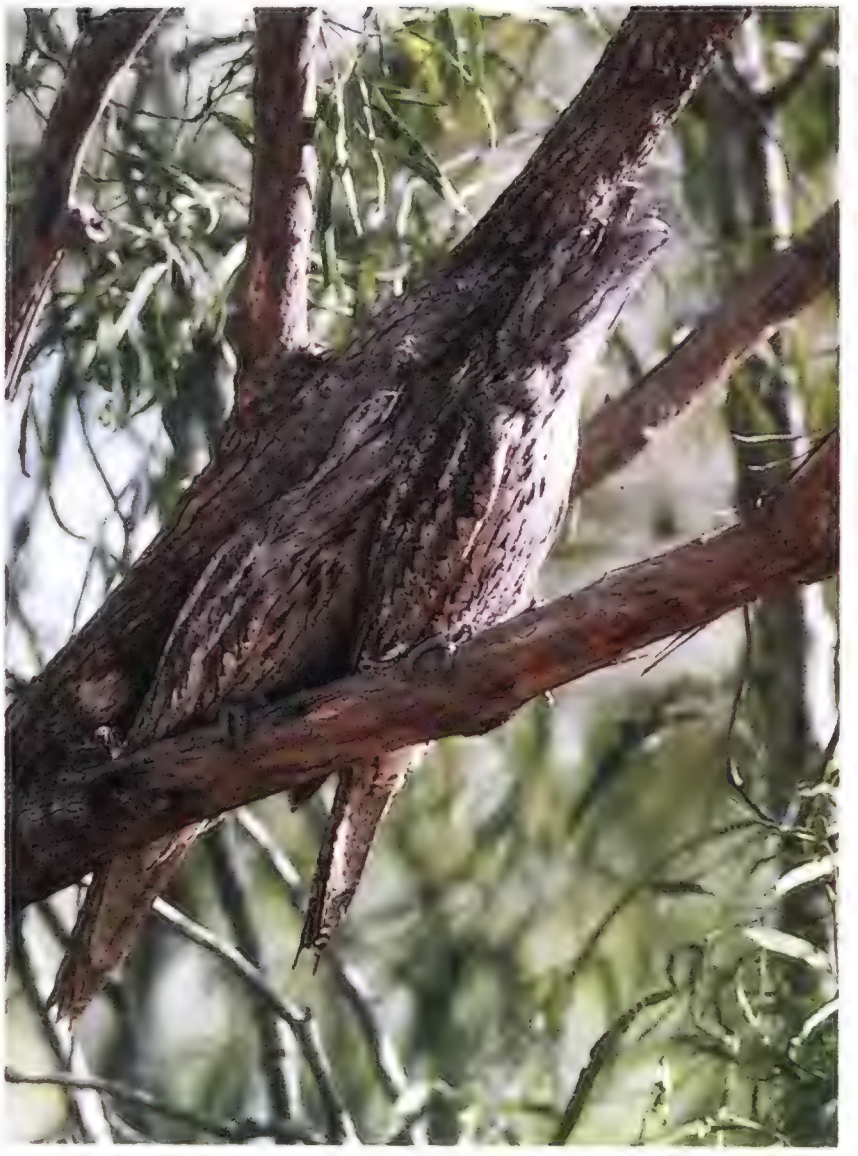
Many animal and plant antipredator adaptations rely on the fortification principle. The Roman armored phalanx was nicknamed "the tortoise" for that animal's nearly impenetrable defenses. The thorn fence, or boma, used around villages in Africa, and built long before the stone walls of Zimbabwe, employs an antipredator adaptation of plants. In their arms race against vegetarian attackers, however, the plants' weapons have escalated through thorns and spines to irritating hairs and virulent poisons.

Biological shields and walls appear in the early pages of life. Massive armored, lobsterlike animals, the eurypterids, clearly predatory, swam the Silurian seas. The fishes of that period were encased in great, bony armor. Was this cause and effect? It may have been. The dinosaurs certainly produced bizarre armored forms, and their livelier successors, the mammals, have used spines and armor plates in defense. Porcupines, hedgehogs, armadillos and pangolins are all bespined or armored to good effect. Hedgehog spines constitute a firmly embedded barrier. Many Europeans are familiar with the characteristic frustrated barking that signals the inability of the domestic dog to find its way beyond the spines of a rolled-up hedgehog.

Rolling up is a tactic used by some mammals, pill bugs and some armored millipedes. In attacking such armored animate balls, at least one predator has triumphed. The mongoose uses a variant of its egg-smashing behavior. It hurls a curled-up millipede backward through its arched hind legs against a hard surface. This technique not only effectively smashes eggs, it also destroys the ball-armor defense.



Hedgehog curls up in the defensive posture shared by pill bugs, armored millipedes and several mammals.



Frogmouths (whippoorwill relatives) escape daytime predators by blending with the branches they perch on.

Ants are perhaps the most numerous of all tropical insects. Their diversity and specializations are phenomenal. In their magnum opus on the subject, Bert Holdobler and Edward O. Wilson argue that ants "represent the culmination of insect evolution, in the same sense that human beings represent the summit of vertebrate evolution." It is difficult not to agree. Throughout the tropics, ants of many species, in great profusion, patrol every surface with unceasing vigilance. As a result, anti-ant defenses have reached considerable complexity. Most diurnal spiders, for instance, spend the night in the safety of their silk constructs. Those that do not build webs, the hunters, belay themselves below leaves, twigs and branches on lines of silk. There they can detect the approach of the night-running ants.

Ants have been just as busy devising defenses against their own predators. Injured or attacked individuals release an alarm pheromone that brings other workers to the site. Ant hunters must either capture one (or more) ants without being besieged, or be resistant to ant bites and stings. Most ant-eating mammals prefer termites, which can't sting, to ants, which can.

Some spiders prey upon ants with relative impunity. Because worker ants cannot fly, they cannot counterattack predators that are essentially aerial. Ogre-faced spiders (*Deinopis*) often build their webs just above ant trails. Suspended from a silk scaffolding, the spider holds a rectangular sticky trap in its first two pairs of legs, one foot holding each corner. When an insect, such as an ant, crawls into the spider's field of vision, the spider dabs downward with the trap and lifts the insect off its feet. It can then deal with that luckless individual out of harm's way. I have seen several *Deinopis* spaced out above an ant trail, picking off the passing workers. Attacking an ant column from concealment with sticky traps is very much in the style of snipers picking off soldiers from a single-file patrol.

The attire of soldiers has changed in the course of military history. Once, uniforms were awe-inspiring devices; bluff was predominant. Hats, jackets and trousers increased the apparent height and strength of the combatants, just as the English bobby's helmet still does. In response to accurate long-distance weapons, however, concealment became more important than bluff. Conspicuous soldiers were easy targets for riflemen. "The redcoats are coming" speaks for itself. Not surprisingly, the first camouflage was developed in mountainous areas where vistas were long. The quintessential camouflage color, khaki, probably first arose when British troops fighting in Afghanistan in the 19th century dyed their white summer uniforms with tea. Khaki must have greatly reduced the conspicuous-

ness of the soldiers against the arid brown landscape.

Camouflage has survival value for animals, too. A huge range of animals have simple color-matching for concealment—green bodies on green vegetation, brown on brown, and so on. There are even crab spiders that are gaudily colored to match the flowers on which they lurk to catch visiting insects. For years this latter strategy was thought to be aggressive camouflage, supposedly concealing the predatory spider from its prey. Now we know that this is not likely. When a yellow crab spider on a yellow flower is seen with ultraviolet vision, as insects see it, it is darkly conspicuous. Its color is a defense against spider-eating birds that don't have ultraviolet vision. Viewing things in extremes of the spectrum outside of humanly visible light can penetrate camouflage designed to work against vertebrate eyes. Infrared-vision devices can reveal camouflaged weapons hardly visible to the naked eye.

In addition to "simple" camouflage, many animals have patterns that obliterate outlines and shapes—and behaviors to match. These specialized extremes of camouflage include obliterative patterns similar to the "dazzle" coloration used on battleships in the two world wars. Some early attempts at painting battleships to resemble the color of the sea failed to take into account its constantly changing hue. Dazzle conceals both shape and directionality; if the gunner cannot pick out the beginning and the end of a ship, aiming is difficult. Radar changed all that. Camouflage became obsolete—but not for the zebra. Recent studies suggest that the zebra's stripes may be a defense against tsetse flies as well as lions. The flies seek large mammals to provide their diet of blood; they home in on large, solid-colored shapes. In experiments with zebra models towed behind a Land Rover, all-black and all-white models attracted more flies than did striped ones.

In any arms race, sooner or later some enemy penetrates a defense, and escalation starts anew. In the case of visual defenses, the next step beyond camouflage may have been disguise or mimicry. Instead of being concealed, undetected and unseen, the disguised object is seen but ignored as irrelevant. The first disguised weapon in recorded history may have been the Trojan Horse. Disguise was widely used in World War II (SMITHSONIAN, April 1985). Whole areas of cities were changed in appearance to misdirect bombers; phony airfields and factories were built; and weapons were disguised as harmless or irrelevant objects.

An animal that is disguised as a stick, leaf, flower or piece of bird dung is irrelevant to predators. My own early research concentrated on such highly specialized disguises. Some seem incredible in their perfection. Good disguise involves two kinds of complementary adaptation: the subject must conceal all the clues to its true nature and closely resemble the object that it mimics. It's no good fading into the background if giveaway structures remain detectable. It's no good wearing a well-camouflaged uniform if the soldier's face, feet and hands are not camouflaged. Giveaway clues mean death. Animals do the same things: red-eyed tree frogs cover their bright eyes with dull eyelids by day and conceal the bright-orange inside edges of their arms and legs. Frogmouths, remarkable birds that rest by day in a posture that enables them to resemble

The zebra's stripes are a defense against big cats as well as tsetse flies—the latter have been found to seek out solid shapes.

tree branches, close their eyes and fold their wings tight against their bodies, blending in with the trees on which they perch. Camouflaged insects need to conceal such characteristic features as six legs, paired antennae and body segmentation. They do this in an amazing variety of ways.

Clearly predators have, in the history of life, penetrated disguise after disguise and driven their prey into the most improbably elaborate forms of mimicry. Even sophisticated naturalists have been led to mistakenly comment that some forms of leaf and stick mimicry are "too good to be true," implying that the deceptions are better than the discriminatory abilities of the enemies. This is almost certainly wrong. I once conducted experiments, using tamarins as predators, in which I glued tiny insect legs to four-inch sticks. The monkeys totally ignored normal sticks but seized the sticks-with-legs and bit them! Legs, however small, meant food.

A final word about bluffing: the karate yell, the bayonet-charge scream, the bugle calls of the Korean War, all help to promote fear. Predators are always in a state of ambivalence when attacking unfamiliar prey. Devices that induce fear have survival value in the world of nature as well as in personal combat. Some of the animals I have worked with go in for elaborate startle displays, in which they increase their apparent size, reveal bright warning colors and indulge in bizarre and erratic movements. Mantids are masters at martial arts displays, as are thoroughly frightened cats, with raised back, fluffed-out fur, flattened ears and climactically explosive spit. They scare even me, particularly when the cat is a tiger.

The arms race in the animal world has been continual, complex and intricately evolutionary. According to at least one viewpoint, it could have produced the intelligence that permits you to read this now. In the world of nature the struggle is endless. I sincerely hope that our struggle has ended.

Responding to a threat, a predator wanna-be uses sound to induce fear and appears to increase its size. Military uniforms were once designed to create the same illusion, as were British constables' helmets.

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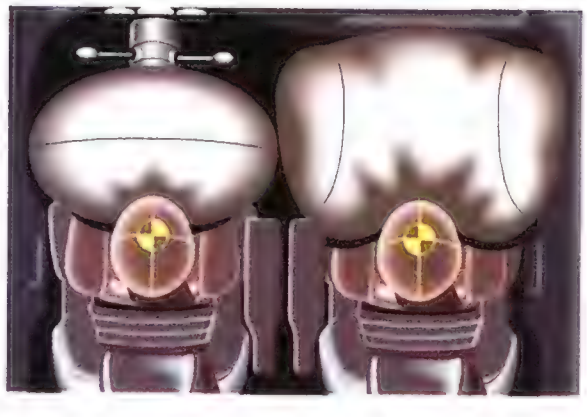

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South of the border, an art of myth, magic and mortality

In a new book and exhibition, a photographer and a writer visit 50 of Mexico's most revered artists; here are 7 with their own visions of reality

For the next several years, an unusual exhibition will travel throughout the United States under the umbrella of the Smithsonian Institution Traveling Exhibition Service. "Capturing the Spirit: Portraits of Contemporary Mexican Artists" is the result of three years' work by a photographer-and-writer team, Carole Patterson and Margaret Sayers Peden. In an effort to better understand our closest neighbor to the south, they visited 50 of Mexico's poets, writers, artists and other creative people, photographing and interviewing them.

A book entitled *Out of the Volcano: Portraits of Contemporary Mexican Artists* is also available from Smithsonian Institution Press. It includes Patterson's portraits and essays by Peden on all of the individuals.

This month, the exhibition is at the Museum of Art and Archaeology at the University of Missouri (April 3-May 10) and the H.U.B. Galleries at Penn State University (April 4-May 10). On these pages, seven of the featured artists are profiled, using Patterson's portraits and text derived from Peden's essays.

In their interviews with Peden, the artists mentioned certain themes as influences on their work, such as Catholicism, the country's strong centralized government, and machismo.

But most prevalent are the themes of death, and of myth and magic. "Mexicans challenge death as a matador taunts a bull with his red cape," writes Peden. "While we Americans go to elaborate measures to deny death, Mexicans embrace death in their lifetimes." Similarly, Mexican art is permeated with myth and magic, and with a continual dialogue with the past. As Chilean Nobel laureate Pablo Neruda has written, "Every kind of magic is always appearing and reappearing in Mexico."

Angela Gurría

Angela Gurría has succeeded in monumental sculpture, a field in which, even today, throughout the world, the major creators are predominantly male. "It is quite significant," she says, "that I began by signing my work 'A. Gurría,' so that no one knew whether I was a man or a woman. All the people involved in competitions and the like were sure that I was a man, and were invariably surprised to find that the person in question was a woman sculptor."

The most astounding example of sheer volume in her work is the dam-

site project she directed in the Valle de Bravo, where she integrated huge pipes into a mountainside. Her design, inspired by Chichén-Itzá, required the cooperation of more than 2,000 workers. The sculpture shown here, *Monument to Workers on the Deep Drainage System* in Tenayuca, with its elongated pyramidal bases, also suggests ancient Mayan monuments. In an intriguing combination, four of the bases are crowned with polished segments of grooved tubes, open at the top, that evoke the steel-drum markings of storm-sewer pipe.

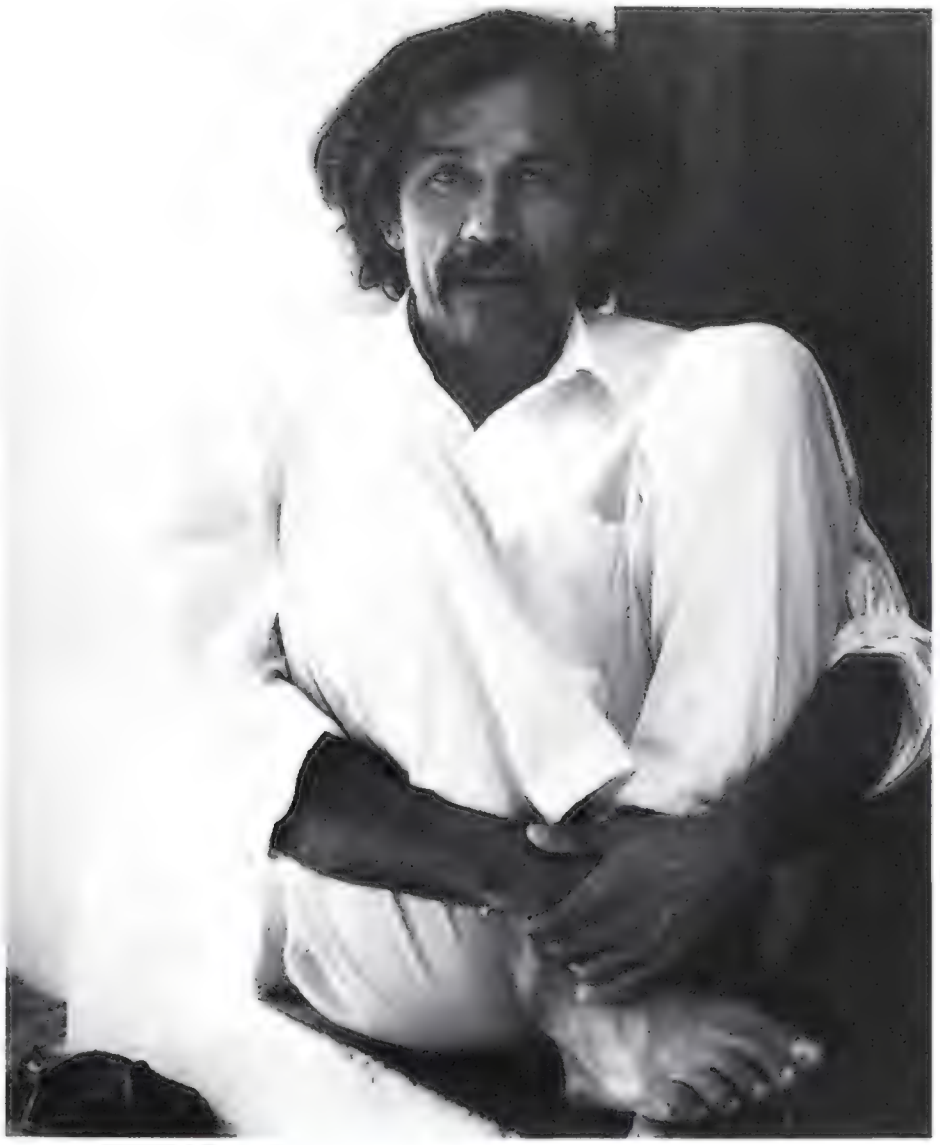
Manuel Alvarez Bravo

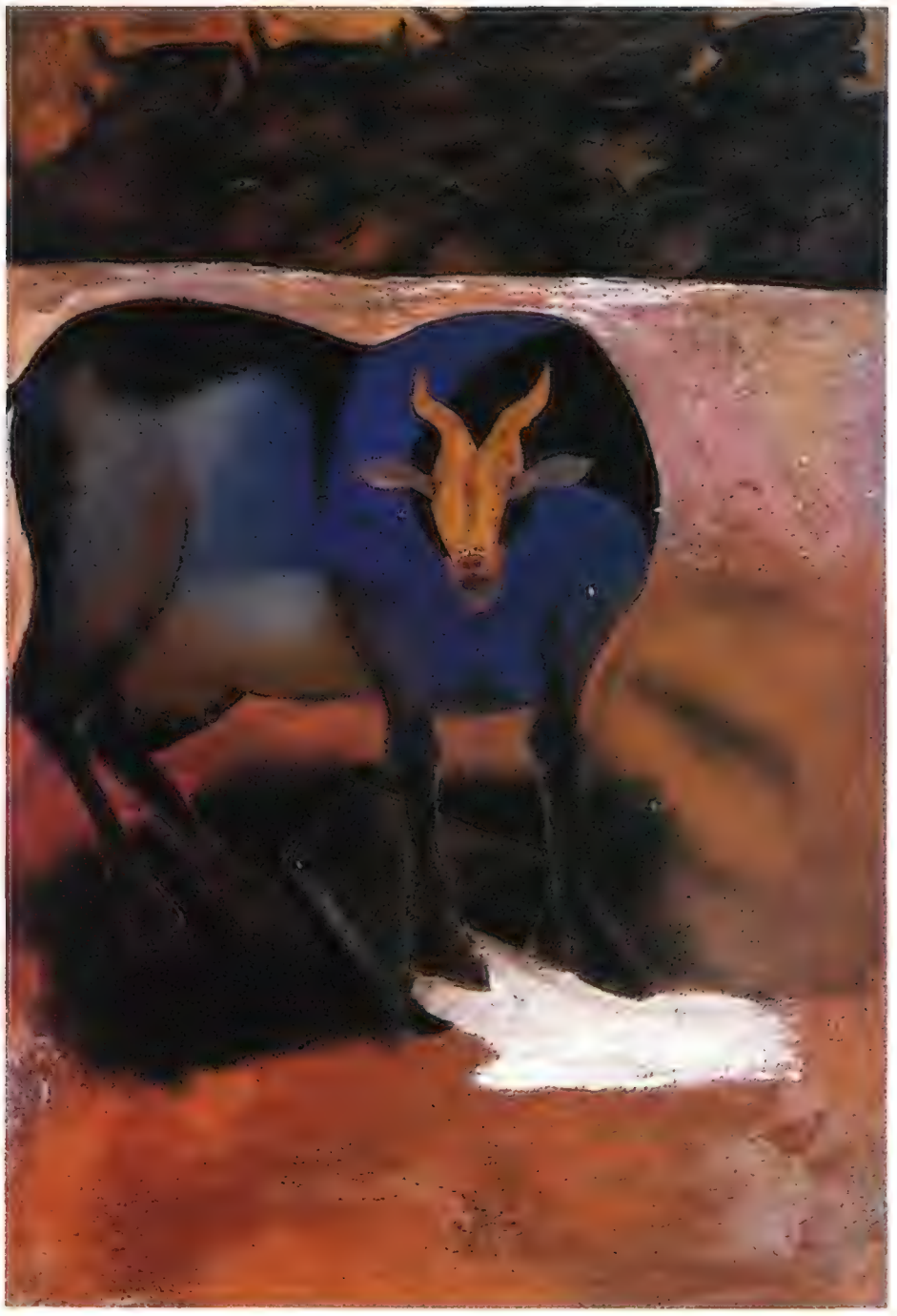
"I was born in Mexico City behind the Cathedral, in the place where the temples of the Mexican gods must have been built." Those words from a personal letter written in 1943 convey a great deal about this photographer's self-identity: he has never been comfortable working outside his homeland.

Born in 1902, Alvarez Bravo left elementary school to work and help his family. Later, he took courses in accounting, literature, music, painting, even homeopathic medicine, before settling on photography. Substantially aided by his friend Tina Modotti, an Italian-born photographer who became a revolutionary activist in Mexico in the 1920s, he never turned back. In the 60 years of that trajectory, he has lost neither his humility nor his sense of humor.

Asked if he is a magical realist, Alvarez Bravo replies that "magic" is a very slippery word. The viewer, however, feels that magic is not at all slippery when he sees the most ordinary objects transformed by Alvarez Bravo's eye: a way-weary dog before a listing wooden gate, carousel horses, cacti, bark, laundry, posters, a dress draped over a chair. And walls—he seems to find a special magic in texture and shadows on walls, a hole in a wall, girls against walls, trees against walls, flags in sod atop walls, a mule and a girl behind a wall and, combining two of his favorite motifs, a carousel horse against a wall (right).

Alvarez Bravo is regarded as the foremost Mexican photographer, but he is unimpressed. "I work for the pleasure, for the pleasure of the work," he says. "Everything else is a matter for the critics."





Francisco Toledo

When one considers the range and level of Francisco Toledo's talents, one often thinks of Picasso. Like Picasso, Toledo paints in many media, and in addition, creates ceramics, tapestries, graphics, frescoes and sculptures. Like Picasso, too, Toledo is incredibly prolific. His heritage, like that of another superb Mexican artist, Rufino Tamayo, is Zapotec Indian. He has been called a magic realist, a monstrous realist, a fantastic realist. Toledo is anything but a naïf, however. He has studied and worked in Paris and has donated a sophisticated art collection to the people of Oaxaca. Yet, in spite of his productivity, Toledo is shy, and continually hugs his body as if he were cold.

The art of Toledo, who was born in Minatitlan, Oaxaca, in 1940, is rich with figures from nature, as in the work shown here, *Vaca mala* (Bad Cow). Few colors are ignored in his palette, but earth tones predominate. His work is both autobiographical and mythic, welling from immortal tribal tales and legends. Subjects, forms, objects, are often built of layered fragments; canvases are filled with repeated images that create a world of fable: pranks, rituals, obsessions, and birth and death cycles.

A man on the move, Toledo has a ceramics studio in Cuernavaca and produces his engravings in Mexico City and Paris. He also maintains a publishing house, Ediciones Toledo, which is devoted to poetry, children's stories, Oaxacan and Zapotec culture, and photography. A strong supporter of fellow artists, he published Graciela Iturbide's stunning collection of photographs, *Juchitán de las mujeres* (Juchitán, Town of Women).

Julio Galán

"Mexico," says painter Julio Galán, "is a naturally surreal country." The same may be said of Galán himself, who produces enigmatic self-portraits in vibrant colors. He posed for the photographer in front of a diptych in which he depicted himself lying in an elongated bed, his head nearly buried in the pillow. This diptych was included in a recent New York City gallery exhibition of his works, which was entitled, appropriately, "I, Galán, My Own Icon."

Galán, who was born in 1958 in Múzquiz, Coahuila, knew as a child that he wanted to be an artist. "There was never a time I wasn't painting," he says. To appease his parents, who wanted him to have a profession, he studied architecture in Monterrey, Mexico, for seven years. Afterward, he moved to New York City in 1984 and began to paint full-time. He now has homes in both places.

For Galán, who admits to being "enchanted—too much" by the works of Frida Kahlo, every painting "is like a therapy, a self-analysis, but it's not conscious." At one time inscriptions were a prominent feature in his works. His more recent paintings, like the diptych shown here, explore with great intensity the themes of fragmentation and disjunction.

Francisco Zúñiga

In clay, wood, stone and bronze, Francisco Zúñiga creates sculptures of Indian women. He turned to this subject in the 1960s, after 20 years of making monumental sculptures for the Mexican government. Although he was born in Costa Rica in 1912, Zúñiga moved to Mexico City in 1936, joining the faculty of the School of Painting and Sculpture two years later. He is shown here in his studio, among the plaster molds of his works.

Zúñiga believes that an artist's roots are irrevocably sunk in his culture. "Many people ask, Why do you do so many women? . . . My point of departure is not the Greeks, but pre-Hispanic art. I am not original in this. Diego [Rivera] did it. Picasso did it. [When I came here from Costa Rica] I saw these women in the street everywhere, and they were sitting there like the sculptures I had seen in museums, like goddesses of the earth and the corn. Imagine my amazement! I had drawn sketches of small pre-Hispanic stone sculptures I had seen, and now I was seeing those sculptures sitting there alive, selling their fruit."

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Graciela Iturbide

"I have always been very interested in the culture of my country," says photographer Graciela Iturbide. "So I have always tried to work outside the city. It has been a way that I could . . . learn more, be closer to the people I so greatly admire. That was how I began my work—with native peoples." Iturbide often has no permanent address; she sometimes lives among the Indian women she has photographed so beautifully and truthfully.

Iturbide was born in Mexico City in 1942. After having her children, she began studying cinematography in the early 1970s. But she met master photographer Manuel Alvarez Bravo and, for a year and a half, served as his apprentice. She abandoned film to devote herself to photography.

Iturbide believes that a photograph is a self-portrait, an expression of the photographer's dreams and sentiments. In her images, she delves deeply into the Mexican consciousness—especially the female consciousness. *La señora de las iguanas*, probably the most widely reproduced of her portraits, shows a woman wearing a bizarre crown of lizards above an impassive face. In *Mujer Angel*, 1979 (above), a woman escapes across craggy terrain toward a barren landscape, anchored to life by the weight of the stereo she carries in her right hand. As Mexican poet Verónica Volkow writes, "More than observe, Graciela's camera seems to dream."

At present, Iturbide is working on a project about the fiesta and death in Mexico. "I think death is an obsession we have," she says; "and those of us who have a creative talent must understand what death means among our people."

Marta Palau

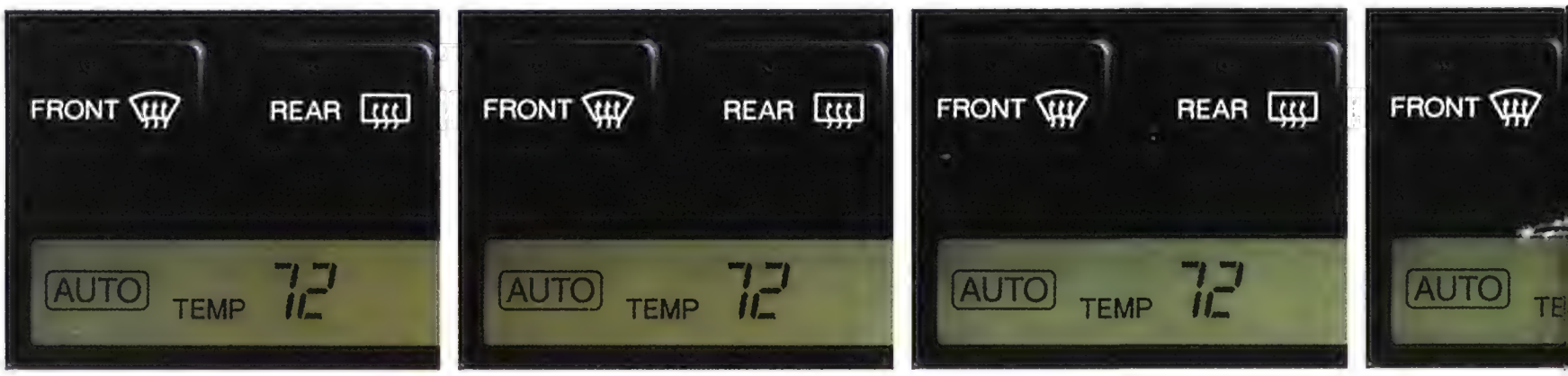
Born in Albesa, Spain, in 1934, Marta Palau was brought to Mexico by her parents at the age of 6. "I'm Catalan by origin," she says; "but really, I'm Mexican, because this is where I grew up." She established her reputation as a tapestry artist with woven hangings. She then made a series of constructions, such as sculptures of coarse wool that flowed from rods suspended high in trees.

In her recent large-scale works—which she calls "ritual installations"—Palau uses the wood and bark of the amate tree, along with coarse salt and even earth itself (above). "My interest in natural fibers led me to the traditions of the people and, almost simultaneously, to my need to know their myths and rituals," she has written.

In 1987, on a trip to Brazil, Palau first saw the art of the Amazon Indians. "That encounter was fundamental," she says. "Its impact was reaffirmed when I learned that these peoples use languages very like ours, languages with the same charge of magic." That same year, at the XIX Biennial in São Paulo, she presented an installation she called *Recinto de chamanes* (Enclosure of Shamans). Other trips to Cuba, where she observed a *santero* (a Yoruba witch doctor), inspired her to construct an installation of ritualistic staffs.

"Art begins as ritual magic," says Palau. She believes her works speak directly to the viewer's senses—that even civilized, that is, urbanized, peoples carry the memory of magic "in their genes."

Maybe It's Time You Injected Some Monotony Into Your Life.



Monday *Tuesday* *Wednesday* *Thurs*

The ES 300

Plus ça change, plus c'est la même chose, the more things change, the more they remain the same. Lexus engineers are firm believers in this quip, at least when it comes to the way the automatic climate control of the Lexus ES300 sports sedan operates.

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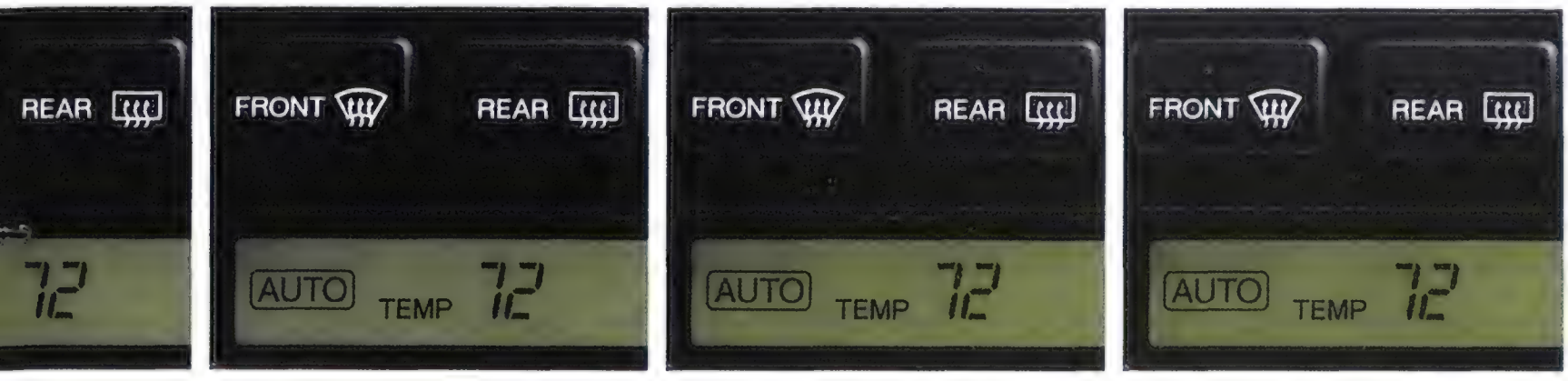
The result? The weather may not be predictable, but the cabin of the Lexus ES300 surely is. Day in, day out, it's always the same old story. Which, when you think about it, is quite a pleasant surprise.



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A mere sampling of torsos passing through New York's Green Market at Union Square last summer produced this T-shirt Tower of Babel, from Ben & Jerry's ice cream to abortion rights, from the NFL to the KGB.

By J. D. Reed

Hail to the T, the shirt that speaks volumes

After 50 years, the ubiquitous undershirt is the Big Mac of fashion, as well as a cracked-mirror image of American life

We are standing outside the Hard Rock Cafe, the high-decibel, high-profile bistro on New York City's West 57th Street. The tail fins of a vintage Cadillac protrude from the wall above the entrance. To the right, a long line of people stand patiently on the sidewalk. But this crowd is not waiting to savor cheeseburgers or check out celebrities. Instead, they take turns ducking through a separate door that leads to the Cafe's clothing annex.

Most Saturdays a thousand or so people make it to the clothes counter, and many of them fork over at least $13 for a T-shirt. Altogether, Hard Rock Cafes in Dallas, Washington, D.C., London and other cities sell millions of T-shirts a year, bringing in almost as much cash as do the restaurant chain's food and drink.

The T-shirt, which first hit the national consciousness during World War II, has become the Big Mac of the international clothing industry. All over the world, billions of T's, garnished with a babble of words and images, are donned by men, women and children of every stratum of society. In the United States alone, more than one billion were sold in 1990.

T's have become such a familiar part of the visual landscape that little thought is given to the extraordinary stroll they have made down the fickle runways of fashion. Their significance goes beyond the level of mere couture—high or low. They are, in fact, an anthropologist's dream source for studying ongoing political, sexual, social and even verbal fashions. Unlike the graffiti at Pompeii, today's graffiti may wash away or get covered by layers of paint. Meanwhile, it is the T-shirt that will offer attentive future observers an extended, if quirky, index to the manners and mores of the late 20th century.

Consider the following scraps of cultural dialogue. T-shirt number one: JUST SAY NO. T-shirt number two: JUST SAY WHEN. To future anthropologists, some shirts will be easy to decipher. NUCLEAR POWER: ROTTEN TO THE CORE will lead them straight to 1979 and Three Mile Island. WE BELIEVE ANITA HILL and A WOMAN'S PLACE IS IN THE HOUSE (AND IN THE SENATE) will also provide an easy link to a specific period of history. Ditto for WE DON'T CARE. WE DON'T HAVE TO. WE'RE EXXON. But 500 years from now, what will scientists trying to reconstruct our world from the ruins of our culture do with: WHERE'S THE BEEF? or DIE, YUPPIE SCUM, not to mention T-shirt variations of elderly Mrs. Fletcher's TV-ad line I'VE FALLEN AND I CAN'T GET UP.

Essentially, the T-shirt began as underwear and graduated to outside work. Its origins are murky, though most likely nautical. One story goes back to a time when British sailors were ordered to sew short sleeves on their undershirts, to spare royal eyes the sight of hairy underarms. Another blames it all on undershirted longshoremen unloading tea in 17th-century Annapolis, Maryland. "Tea" became "T" and the rest is history. One thing is sure. In 1913 the U.S. Navy adopted the crew-necked, short-sleeved, white cotton undershirt, to be worn under a jumper, in part to cover sailors' chest hairs.

Ashore, T-shirt lineage is equally tantalizing. Before World War II, in the 1930s, the dread sleeveless singlet, with over-the-shoulder straps, a deep neck and totally exposed armpits, dominated the underwear wardrobe of the American male. But the T-shirt was a great leap forward, and by the late '30s Hanes and Sears, Roebuck started marketing cotton undershirts with short sleeves and a high neck for as little as 24 cents apiece. Sears introduced theirs in 1938. Giving credit to the seaman, they called it the "Gob"-style shirt and presciently proclaimed it both an outer garment and an undershirt—"It's practical, correct either way."

Gable shucked his dress shirt

They weren't called T-shirts then, and they didn't catch on, in part because in 1934 undershirts in general were dealt a serious blow by Clark Gable. The blunt instrument was the film *It Happened One Night*, in which Gable shucked his dress shirt to reveal that he wore nothing underneath. His costar, Claudette Colbert, seemed none too impressed, but American women liked the look, and their men were quick to follow Gable's lead. Undershirt sales plummeted. Waiting offstage, however, was World War II and an under-

Photographs by Jonathan Atkin

The T-shirt through thick and thin

Marlon Brando as Stanley Kowalski gave the T blue-collar panache in *A Streetcar Named Desire* (1951).

wear revolution in the making. In 1941, as America was cranking up its war effort, the Navy called on its suppliers for millions of milky white, moderately high-necked, cotton-knit undergarments ever after to be known as skivvy shirts. The Marine Corps would get theirs in sage green. And after the war, the U.S. Army got on board, too, in olive drab.

For the millions of men and women who have served ever since in every theater of operations, but particularly in the tropics, T-shirts have been treasured gear. T's always look neat, and they wash easily. You can use them to polish belt buckles or shoes, or if necessary, press them into service as pillows or bandages. Most male escapees from the singlet have never worn anything so useful or comfortable. Thus it was that the T-shirt became *the* postwar undershirt—often, in warmer climates, the *only* shirt. It was an egalitarian item of costume, too, donned every day by men in every walk of life. Veterans (and their sons) simply felt naked without one.

For a while, the T-shirt suggested the kind of crew-cut cleanliness and neatness indigenous to the new, postwar suburbs. Even Senator John F. Kennedy, millionaire Navy hero and in many ways America's beau ideal, was photographed lounging about the garden of his Georgetown home in a T.

The most common place for the T-shirt, though, was on the back of the working man, for whom its comfort was essential. As a replacement for the armpit-revealing singlet as a man's only torso covering, the T-shirt came to serve as a proletarian symbol, a kind of sartorial pickup truck. Marlon Brando guaranteed the garment's place in the image of the American working class in the 1951 film *A Streetcar Named Desire* (left). As Tennessee Williams' macho, mean-spirited lowbrow lug Stanley Kowalski, Brando flexed and mumbled with animal sensuality, his rippling muscles shockingly visible beneath the form-fitting shirt.

James Dean froze the look

With Brando, too, in *The Wild One* (1954), the T-shirt debuted in its most enduring role, as battle flag of youthful rebellion. A young man who appeared in public in the 1950s wearing what middle-class moms and dads still thought of as underwear could set new standards for hormonal behavior. Between his duck-tail haircut and trademark pelvic thrust, Elvis Presley sported a T-shirt under a leather jacket and below a provocative sneer. In *Rebel Without a Cause* (1955), James Dean, T-shirted, jeaned and sporting a nylon windbreaker, froze the look—and the attitude.

Although the plain T has kept its macho appeal, the intervening years have had a gender-bending effect on the shirt's image. As early as 1959, in the film *Breathless*,

Covetous shoppers paw through T's for sale on street at Mumbo Jumbo in Manhattan. The shirts sell for $14. The owner, Jack Rehfuss, prints up individualized T's at home in his living room.

Jean Seberg appeared in the masculine accouterments of short hair and a T-shirt with NEW YORK HERALD TRIBUNE emblazoned on the front. In it, Seberg seemed anything but masculine. In the following decade, as more and more women adopted the T, this formerly macho symbol evolved into a staple of a sexy new androgyny in fashion.

Young women stopped wearing blouses, knee-length skirts and pumps, and started wearing T-shirts with blue jeans or miniskirts. The T-shirt became the uniform of radical youth, male or female. In the mid-'60s, says Edith Mayo, a curator of political collections at the Smithsonian's National Museum of American History, it acquired a serious sort of radical chic, when the Student Nonviolent Coordinating Committee created a "SNCC uniform," a khaki T-shirt worn mostly with jeans and meant to symbolize the rural and working-class origins of many black citizens.

By the late '60s, T-shirts were being tie-dyed, painted and silk-screened with signs of peace and symbols of protest. It wasn't until the '70s, however, that decorated T-shirts exploded into an international forum for publicizing personal feelings, philosophies, political candidates and consumer goods.

For years, the only lettered shirts were those designed to identify college sports teams. The idea of wearing words—and of wearing underwear as outerwear, for that matter—first proved irresistible only to the country's children. They clamored for T's sporting the images of baseball heroes like Joe DiMaggio. In the mid-'50s, TV and film idols Fess Parker (as Davy Crockett) and Roy Rogers achieved their real immortality on kid-size shirts. T-shirts also began to be printed in small, local runs with the names of Little League teams, scout troops or summer camps.

The oldest printed T-shirt in the Smithsonian's collection is a child-size model that reads DEW-IT WITH DEWEY, a relic of New York Governor Thomas E. Dewey's ill-fated 1948 Presidential campaign against Harry Truman. Other Presidential slogans followed, still on T's mostly cut to fit folks under voting age. But as the baby boomers grew up, their T-shirts grew, too.

It was not long before drag racers and surfers on the West Coast were taking designs they'd been airbrushing onto hot rods and surfboards and putting them on T's. Around the country, plain and tie-dyed T-shirts were becoming fixtures of young people's wardrobes. It was the Vietnam War, though, that dramatically thrust the shirt into the world of print and polemics. A nation of youth, teed off at their elders, got all T'd up to let everyone know about it.

Why tire your arms holding a picket sign when you could wear your complaint on your chest? For going to political rallies—or just heading out for a burger—T-shirts became the perfect two-in-one raiment. The country was developing a tendency to believe that opinion was more important than knowledge, a view that fitted these shirts to a T. Without your having to speak, everyone knew where you stood: on the war, on the sexes, on the powers that be. T-shirts expressing

J. D. Reed last wrote for SMITHSONIAN *about whether William Shakespeare or the Earl of Oxford wrote the works of William Shakespeare (September 1987).*

views on every conceivable subject or making personal confessions were soon to follow. LIBERATE MARIJUANA, T-shirts shouted. And IMPEACH NIXON. Or—proving that nothing stays simple—I'M A VIRGIN (THIS IS AN OLD SHIRT).

Just as people were getting accustomed to the talking T, a series of new technologies began making mass production of full-color images on cloth possible. "Suddenly this summer," a 1970 article in *Time* announced, "the undershirt is very much back in—but not as an undergarment. Violently colored and decorated with cartoon characters (Mickey Mouse), symbols of dissent (a marijuana plant) or simple slogans . . . the shirts are a bright new trend for the kids—and the Over-30s too." Four years later *Time* was still babbling on: "Thanks to novel techniques, . . ." its story ran, "major department stores . . . and hundreds of small T shops across the country let buyers pick from an almost limitless selection of designs and sayings—or fashion their own." Manufacturers such as Fruit of the Loom dominated production of the shirts, but the decoration became (and remains) a cottage industry of extraordinary vitality and range.

"Clothes with pictures and/or writing . . ." wrote satirist Fran Lebowitz in her 1978 book *Metropolitan Life*, "are an unpleasant indication of the general state of things. . . . If people don't want to listen to *you*, what makes you think they want to hear from your sweater?" This proved a minority opinion. Whether they thought people *wanted* to listen or not, Americans became more and more determined to let their figures do the talking. The year Lebowitz's book was published, roughly 500 million T-shirts were sold in the United States.

Indisputably, the 1970s were the golden age of the T-shirt. For the members of the Me Generation, T-shirts provided the perfect medium for asserting their individuality. And in a decade of "letting it all hang out," the T-shirt offered instant familiarity among strangers—an index for passers-by to what you thought, liked or wanted to be associated with.

Sandwich boards in portable cotton

Inevitably, the shirts have become collector's items, like postcards, pressed flowers or prom tickets. For the traveler the T replaced the suitcase sticker of the '30s and '40s, offering such messages as MY PARENTS WENT TO PARIS AND ALL I GOT WAS THIS LOUSY SHIRT (or, more lately, GEORGE BUSH WENT TO ROME AND ALL I GOT WAS THIS LOUSY RECESSION).

Folks could flaunt not only where they'd been but what races they'd run, concerts they'd seen, earthquakes and blizzards they'd survived. T-shirt merchandising schemes, especially in cahoots with rock groups, popped up all over. T's were inspired by every fad, trial or even disaster that came along. Just as Desert Storm was being wrapped up in the Middle East, STORMIN' NORMAN FOR PRESIDENT T-shirts hit the streets.

Some 5,600 dancers in straw hats and eye-catching green T's conglomerate in the street outside of Macy's.

Where in ages past, a small business might pay people to stalk the sidewalks wearing ankle-length sandwich boards announcing products or services, now—by selling logo-decorated T's for additional profit or simply giving them away—companies turned their customers into walking billboards. The T-shirt, whether promoting Budweiser or Bloomingdale's, became one of the great advertising mediums in the history of hype.

Paul Fussell, in his caustic social critique *Class: A Guide through the American Status System*, suggests that by wearing a brand name, an otherwise anonymous "prole" fuses himself with some successful commercial commodity—whether it be a pop star or a brand of pop—and becomes, "for the moment, somebody."

"And this need is not for the proles alone," Fussell graciously adds, citing T-shirts "stamped with the logo of *The New York Review of Books*, . . . or printed with portraits of Mozart and Haydn and Beethoven, which assure the world, 'I am civilized.' "

Novelist-critic Alison Lurie coined the term "legible clothing." But even she did not envisage the extensive legibility pioneered by T-shirt publisher R. Gilad

This show of sartorial uniformity, rare for T-shirt wearers, occurred at store's 1991 Tap-O-Mania contest.

Schamess, who last year started marketing short-short stories, each one brief enough to be printed on a single shirt. Naturally he called them Tee Shorts.

T's reflect more than craziness, personal taste and mere consumerism. Political fervor no doubt mellowed in the '70s, but it certainly did not disappear. Women were asserting themselves, gays came out of the closet en masse, environmentalists were out to save the Earth —and their T-shirts conveyed their political agendas, along with provocative shots of humor.

With a little help from Gloria Steinem, a best-selling T asserted A Woman Needs a Man Like a Fish Needs a Bicycle. Today's career women prick our prejudices—and their own—with the sentiment Oh My God, I Forgot to Have Children! Recently, African-Americans have been wearing images of Martin Luther King jr. and Malcolm X on tie-dyed backgrounds, and T's that tell passers-by It's a Black Thing. You Wouldn't Understand.

Obviously the political left has offered flurries of T-shirt punches. Conservatives are not entirely T-shirt shy, either. When capital punishment was reinstated in Florida, for instance, supporters put out a shirt with the sentiment 1 Down, 131 To Go.

The T's potential to provoke has not been ignored beyond our shores. In South Africa, black activists turned to the silk screen to record rage and, lately, a growing political power. At one point, in order to thwart protesters, Cape Town police banned T-shirts that bore the names or slogans of any one of 47 different anti-apartheid groups. Strongly criticized at home and abroad, the order was withdrawn by embarrassed officials.

Even in the United States, where T-shirt wearers are arguably protected by the First Amendment, many people think freedom of the T-shirt press has gone too far. Many American schools prohibit certain T-shirt messages, particularly those that celebrate sex or the use of cigarettes, alcohol or drugs. Outraged residents of resort areas such as Ocean City, Maryland, and Rehoboth Beach, Delaware—where T-shirt merchants promise that they "print anything"—have waged war against the sale of obscene shirts. In that department, the T-shirt has tended toward soft porn. During the sexual revolution of the 1970s, wet-T-shirt contests were all the rage. And countless T's allowing wearers to drop a come-on line or a come-hither look in prose hit the market. Many showed an admirable stylistic brevity. Available does well across a crowded room.

Some T-shirts are instructive. At Rutgers University's Cook College, student advisers used to wear T-shirts printed with a map of the campus, to help freshmen find their way. On their own T's, the freshmen

wore a large X and the words YOU ARE HERE.

One of the T's great victories, won with a little help from the turtleneck, has been over the necktie. The male of the species will be forever grateful. For women, the T has provided an acceptable alternate to the hard-to-care-for blouse. In many offices, it is perfectly appropriate for both sexes to wear a simple, solid-colored, cotton T-shirt under a suit jacket.

In the 14th century, European nobility—bitterly resenting the rise of a moneyed merchant class—set up strict sumptuary laws forbidding upstarts from aping their betters by wearing ermine, brocade, jewels and other status symbols. In the case of such originally modest items of clothing as blue jeans and T-shirts, it is now the rich who are aping the working class, as Paris designer Coco Chanel once said they should.

Seventh Avenue designers offer unmistakably haute T's to a status-symbol-hungry clientele. Designers like Comme des Garçons do well with a flossy white T (at $50) that might be worn under a formal jacket to a dinner party. Others, like Calvin Klein, simply take the plain white T and put their label on it, selling a hefty amount of panache, albeit with a reasonable price tag ($9).

Popular-culture scholars now lament the fact that for years they didn't realize that the T-shirt would become one of the most garrulous and perhaps significant artifacts of 20th-century fashion. Still, not long ago, the Fashion Institute of Technology in New York was able to mount an exhibition presenting the events of 1991, from Desert Storm to the William Kennedy Smith trial, as recorded on T-shirts. Moreover, three divisions of the National Museum of American History—Costume, Community Life and Political History—have T-shirt collections.

The latest wrinkle is a creative collaboration between the T and something called Puff Paint. Squeezed from tubes in globs of many colors, it can turn a kid's T-shirt into a many-splendored fantasy in not-so-bas-relief. Heat-sensitive T-shirts that change color on the body are also a thing of the present.

Nobody knows when it will all end. But what seems perfectly clear is that as long as Americans feel the need to get stuff off their chests, the T-shirt is likely to stay on their backs.

Haute couture T's: each was specially created by a designer—Matsuda ($150), Moschino ($70) and long-sleeved Gianni Versace made from trademarked fabric of mercerized cotton that feels like silk ($820).

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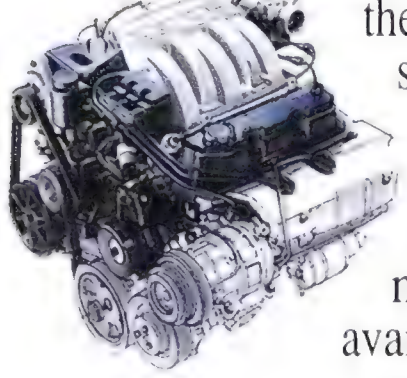

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Dodge Dynasty

Happily, there is nothing at all

Up with the dawn on what appears at first as a flight of fancy. And our spirits soar.

Perhaps we should set you aright. The lakes in Canada's north, like the one pictured here, are in fact water, and not a piece of misplaced sky.

Yes, the sun does hang around for weeks on end—in high season.

No, it's not spilt red, yellow and orange paint, but rather poppies, azaleas and lichen blooms.

The rush of falling water, the ethereal clouds draped halfway up a granite wall, the trophy lake trout you just released; all real, all natural, all right in front of you.

Lunch, 2nd day, still touring the back of our guide's hand. Some hand! But feel we're representing the 'over the hill' club commendably.

The mountains here wear the forest like a favourite old sweater—though slightly overdressed for 80° weather. All in all, comfortably sprawling.

And don't be surprised if, in this land few have seen, you bump into someone you may have lost touch with. Yourself.

It's one of those ineffable feelings you get when you happen upon a herd of reindeer as interested in you as you are in them. (You'll be pleased to note that great stretches of this land are protected by parks that also put the lifelong residents at ease.)

Pic of the day? Zoom lens on eagle circling in search of a thermal.

Of course, roadside lodges, fly-in and outpost camps go without saying. But our first-class resorts with hot tubs, saunas and second helpings may be more of your scene.

Nobody up but the moon. Sitting on the roof of the world—dazed—a million stars in front of my eyes.

unnatural about this picture.

Oh, and the shimmer of purple and green and pink in the night sky? That's the aurora borealis. Native lore will tell you they're spiritwalkers. And it really is quite a charge.

So let us leave by telling you what may be hard to believe is easy to see, wherever your imagination may take you.

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Canada

The World Next Door

By Robert Wernick

The bookseller who couldn't stand to sell his books

Dr. A.S.W. Rosenbach was a connoisseur of rare volumes and a canny salesman to boot, but luckily for us, he kept lots of the best for himself

"Sold for $24," sang out the auctioneer. His benign smile turned to a frown when the successful bidder came up to claim his illustrated volume of *Reynard the Fox* and was revealed as a roly-poly little boy who had to confess that he was 11 years old and that he did not have $24. But when he had looked over this "first baby bibliomaniac" he had ever met, the auctioneer smiled again and agreed to let young Abe Rosenbach keep the book and pay for it out of his school allowance.

It was the first successful transaction in the career of one of the greatest book dealers of all time.

For almost half a century before Abe's death in 1952, the name Rosenbach was synonymous with all that was rare and beautiful—and valuable—in the world of books. The name and many of the books are preserved in the Rosenbach Museum & Library in the Philadelphia town house that was Abraham Simon Wolf Rosenbach's last headquarters—"a treasure house of connoisseurship," as Werner Gundersheimer, director of the Folger Shakespeare Library in Washington, D.C. puts it, with its 30,000 printed volumes and 270,000 manuscripts, each one a revelation, or at least a curiosity, to anyone with the fever of rare books in his blood.

A great book dealer has to be something of a bookworm and something of a buccaneer. A.S.W. Rosenbach had a family background that was rich in both of these directions.

From his earliest age he was awash in talk of books. His mother, who adored him, the youngest of her seven children, would tell him stories of being taught in Hebrew school by the redoubtable Miss Rebecca Gratz, who in her youth had inspired Sir Walter Scott to create Rebecca, the heroine of his *Ivanhoe*. One of his mother's brothers was Moses Polock, who owned a famous bookstore in the city, a man who loved books so much that he could hardly bear to sell them, and let them pile up from cellar to attic. Little Abe used to prowl through this dusty wonderland after school every day, peeking into books, listening to the arcane

Inviting library on the third floor of the Rosenbach town house is left much as it was in the Doctor's day.

Rosenbach Museum & Library

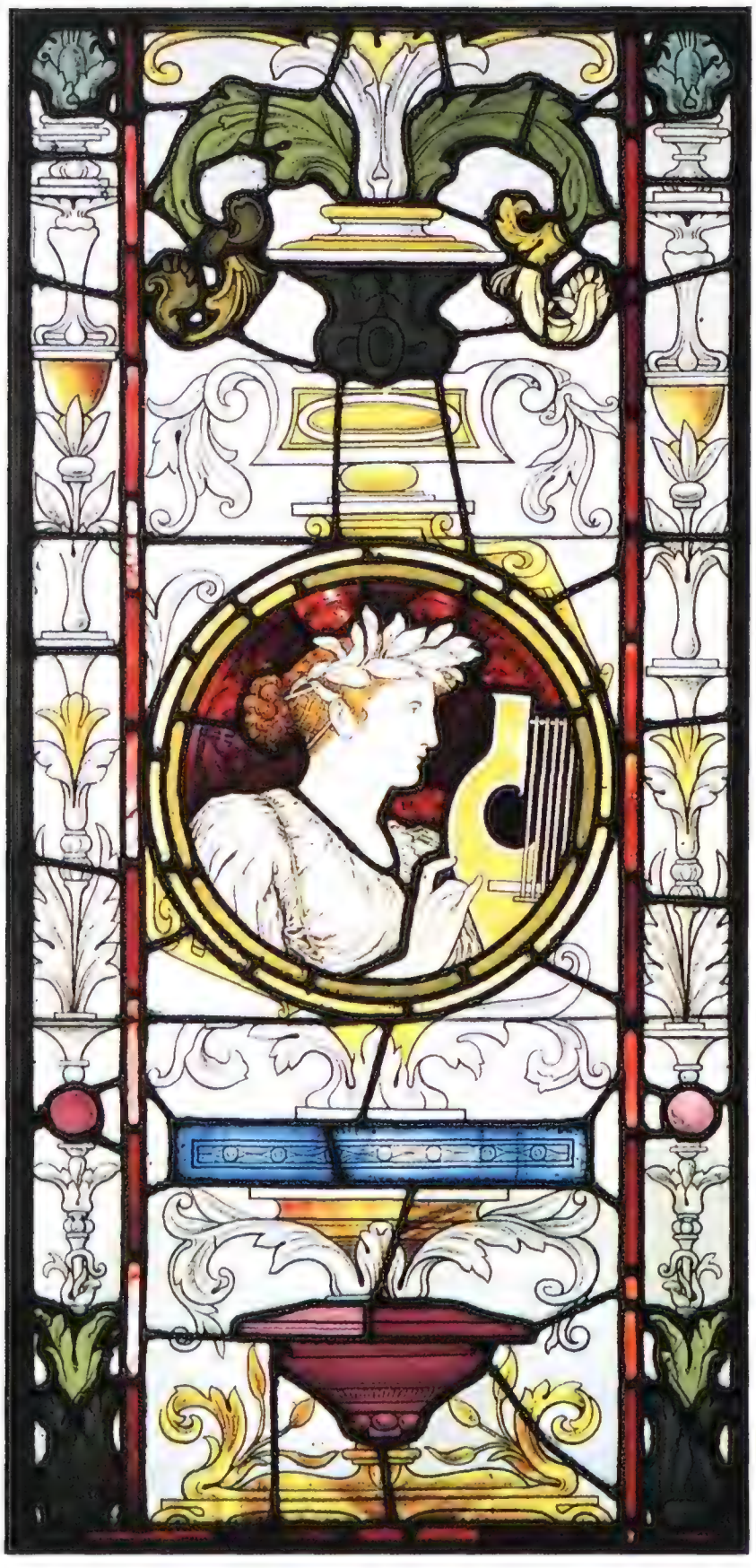
Bookcases hold prized works of the late 19th and 20th centuries. Portrait is of the famed collector in 1931.

gossip of people who treasured them. He heard anecdotes about the famous authors—William Cullen Bryant, James Fenimore Cooper, Herman Melville—that he would repeat and embroider on all his life. One of them told how Uncle Moses had bought all the unsold copies of *Tamerlane*, the first published work of Edgar Allan Poe, who badly needed money for a drink.

Two other uncles added a different note. They had gone off to California with the forty-niners, and both were murdered there. Uncle Barnett was gunned down in a San Francisco street with his pockets full of gold dust. It has been suggested that Uncle Lewis, veteran of a Mexican jail who was killed in a shootout in a bawdy house, was the flashy gambler credited with introducing into the English language the word *poker*—from the German *pochen*, to boast or to bluff—for a card game popular in the mining camps.

Left to his own devices, A.S.W. Rosenbach might not

Photographs by John McGrail



Stained-glass window adorns door leading from house to garden. Figure is thought to be Muse Terpsichore.

have amounted to very much. As described in the entertaining biography by his cousin Edwin Wolf II, he was the quintessential mama's boy, always managing to surround himself with compliant females—sisters, mistresses, housekeepers and secretaries—to coddle him and scold him and smother him in rich food and strong drink. After he earned a PhD from the University of Pennsylvania in 1902, he might have been content with a life of desultory scholarship, poking around secondhand bookstores for curious volumes, with time out for fishing and whisky. Fortunately for the world of bibliophilia, he had a brother Philip, 12 years his elder, a flashy man-about-town who had expensive tastes, a man who could not live without Sèvres porcelain, a new suit every month, a diamond-studded case from Tiffany's for his eyeglasses. Philip's half of the Rosenbach Company, which the two brothers founded in 1903, provided tapestries, hunting prints, chandeliers, antique furniture and all kinds of fancy bric-a-brac to the higher social classes of Philadelphia, and almost always operated at a loss. The book department, headed by young Dr. Rosenbach, though at first squeezed into a back room, was soon the financial mainstay of the house. "The Doctor" did not really care much about money, and his bookkeeping was deplorable, but under his brother's ceaseless prodding, a bright and inventive commercial genius emerged from his sluggish flesh. The brothers lived high, and they died rich.

Rosenbach ("Abie" to his family, "Rosy" or "the Doctor" to his customers) never let commerce interfere with his lifelong pursuit of private pleasures. He loved nothing better than to squirrel away precious old volumes he had acquired, safe from the eyes of brother Philip, who would have preferred to sell them.

If he could combine his pleasures, so much the better. He used to fish off the Jersey coast, and one summer he took in more than 1,800 assorted fish. There were other fish in those seas in the 1920s: rumrunners with bootleg liquor often had to jettison it when the Coast Guard boats came close. While his faithful friend Carrie Price pulled the oars, Rosenbach would go out through the surf and haul in cases of whisky, which would make his dinner table in Philadelphia even more festive than usual.

Rosenbach was a genuine scholar, with an immense range of knowledge and interests, encompassing medieval manuscripts and children's books, classical literature, Colonial and Western Americana, ecclesiastical tracts and love letters. He became a superb publicist. His career was a succession of what today would be

A feast of Melville: shelves hold English and American first editions of *Moby-Dick*, and other works inscribed by the author. Nathaniel Hawthorne's copy of *Moby*, dedicated to him, is on the top shelf, seventh from right.

called media events. He made sure that the newspapers trumpeted "ROSENBACH PAYS RECORD PRICE FOR GUTENBERG BIBLE" or "ROSENBACH MAKES OFF WITH ALICE" to a world that hitherto had no idea that there would be big drama and big money in books. The "Alice" was the original manuscript of *Alice's Adventures in Wonderland*, put up for auction at Sotheby's in London on April 3, 1928, by Alice Hargreaves, for whom Lewis Carroll had made up the story on the Thames one quiet day in 1862. A legion of reporters packed into the auction room and covered the proceeding as they might have a championship prizefight, bid topping outrageous bid till Rosenbach knocked out his chief opponent, B. D. Maggs, and walked off with the prize for £15,400 (then about $77,000). The newspapers treated the event as a national calamity: a priceless piece of the heritage of England was being ravished by the money-soiled hands of the Yankees.

There were more headlines a few years later when the cathedral in York ran out of funds to restore its magnificent old building, and Rosenbach came to the rescue. He was delighted by the old volumes lying around its library and offered £18,000 for 18 of them, including Lydgate's *The hors, the shepe, and the ghoos*, one of the earliest books printed in England. The deal was consummated, according to the Doctor's recollection, at a friendly get-together in his London hotel, in which he polished off a bottle of whisky and the canon of the cathedral a pitcherful of martinis. The happy canon, returning to the railway station, lost Rosenbach's check in a taxicab, but it was later retrieved. The press again denounced the looting of England.

Robert Wernick, a frequent contributor to these pages, shares A.S.W. Rosenbach's love of fine food and books, but eschews fishing and collecting of any sort.

Book collecting was traditionally an aloof, aristocratic pursuit, and not everyone was comfortable with its going public. One day Henry C. Folger, the boss of Standard Oil of New York, was playing golf with John D. Rockefeller, the boss of oil bosses. "Henry, I see from the papers you just paid $100,000 for a book," said John D. Panic-stricken, Folger mumbled something to the effect that, you know what newspapers are like, they'll add a zero just like that, just to sell copies. "Glad to hear you say that," said old John D., "we wouldn't want to think that the president of one of our major companies would be the kind of man foolish enough to pay $100,000 for a book." Folger immediately called on Rosenbach and instructed him to keep details of any future transactions to himself.

How times have changed. The volume for which Folger paid $100,000 was an exceedingly rare set of nine plays all bound together, dated 1619, the first collection of Shakespeare plays ever assembled, four years before the First Folio. It is now proudly on display at the Folger Shakespeare Library. Its purchase price seems derisory by today's standards. A set of the first four Shakespeare folios was recently snapped up for $2.1 million. A set of Audubon's *Birds of America* fetched $3.96 million.

In the old days a book dealer was simply a hired hand, an agent for the rich man building up his collection; he came in through the tradesmen's entrance.

Rosenbach changed the pattern. He treated the millionaires who made up the core of his customer list as his social equals. They loved to come over to the elegant old house the brothers occupied in Philadelphia and dine on terrapin bred in the Doctor's own aquarium, listen to his learned opinions and bawdy anecdotes, share his boundless supply of fine wines and whiskies. If in the course of the evening he pulled a 16th-century edition of Surrey's poems off the shelf, saying "This is the goddamnedest copy you ever saw," and it subsequently was exchanged for a substantial sum of money, this was not so much a business deal as a rite of hospitality.

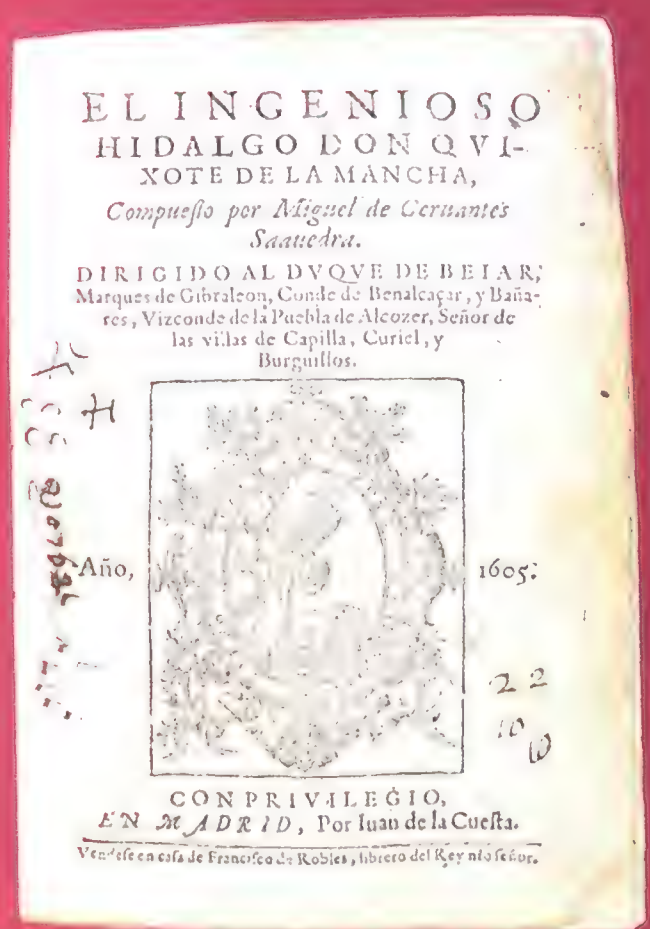
The millionaires knew perfectly well that their boon companion was marking up his prices vigorously when he could get away with it. But they could hardly take offense; they had not behaved otherwise in the process of becoming millionaires. When he was talking to the press he might inflate his figures by 480 percent, announcing that he had bought £400,000 worth of books in a month, when the ledgers read $400,000. But he could be scrupulously honest. When he learned that his brother Philip had talked a man into signing a $100,000 check for some books, including one with facsimile pages, after plying him with more whisky than he could handle, he sent the check back.

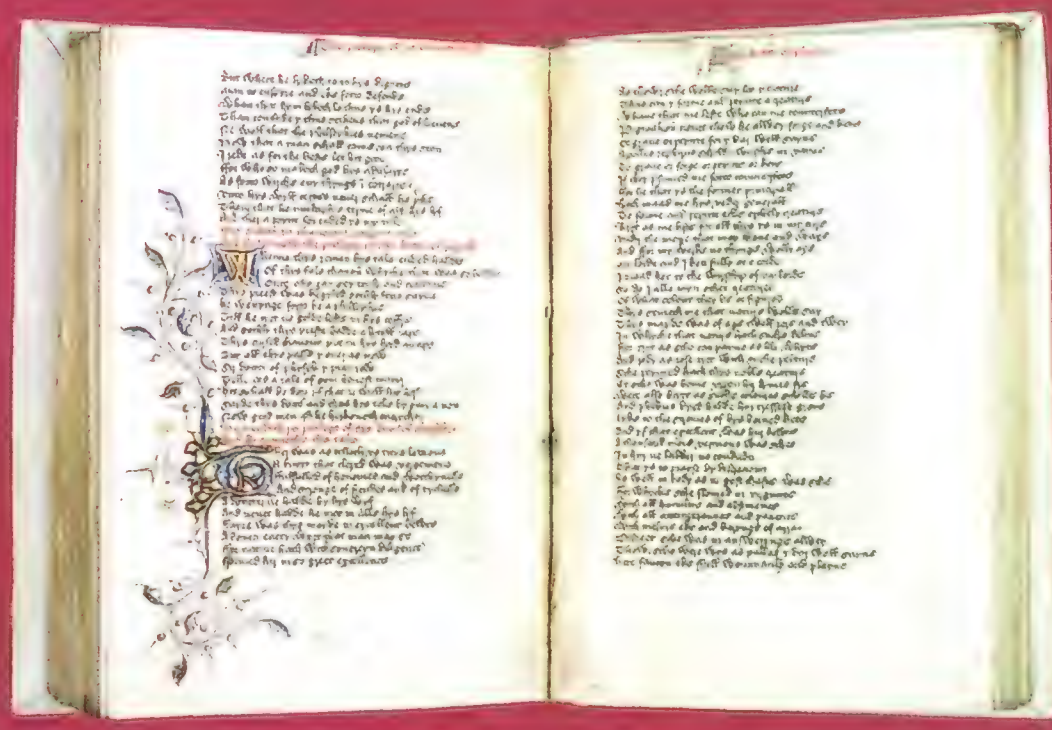
Everybody doing business with Rosenbach knew that they could count on his taste and judgment and enthusiasm, for he was heart and soul a collector.

Book collecting is a bug that strikes anyone at any age. Henry Huntington, the railroad king, was 60 when he began to collect, and with Rosy's help, he built up the largest private collection of books in the country. Harry Widener, the trolley-car heir, another of Rosy's favorite customers, began buying books when he was an undergraduate, and his collection is at the core of the great three-million-volume library that his family built in his memory at Harvard.

In the Rosenbachian sense, book collecting is what T. S. Eliot said of poetry, autotelic; it is its own aim and end. A book collector may be somewhat more highbrow, but is basically the same as a person who collects stamps or baseball cards or screwdrivers or butterfly wings. He can never stop collecting because a collection is never complete. If he has to die, he would prefer to go the way Harry Widener did, buying a duodecimo second edition of Bacon's *Essayes* from Quaritch in London, putting it in his pocket with the words, "If I'm shipwrecked it will go down with me," and then going off to board the *Titanic*.

What makes the heart of the collector throb is the human, historical aura that surrounds the book. Any book collector might be at least mildly interested in a first edition of Chapman's Homer. But let him hear from Abe Rosenbach that he has in his possession (he loved capital letters) "THE 'WIZARD' EARL OF NORTHUMBERLAND'S COPY OF THE FIRST EDITION OF CHAPMAN'S HOMER, ONE OF THE FOUR ENGLISH BOOKS TAKEN BY HIM


EL INGENIOSO
HIDALGO DON QVI-
XOTE DE LA MANCHA,
Compuesto por Miguel de Cervantes Saauedra.
DIRIGIDO AL DVQVE DE BEIAR,
Marques de Gibraleon, Conde de Benalcaçar, y Bañares, Vizconde de la Puebla de Alcozer, Señor de las villas de Capilla, Curiel, y Burguillos.
Año, 1605.
CON PRIVILEGIO,
EN MADRID, Por Iuan de la Cuesta.
Vendese en casa de Francisco de Robles, librero del Rey nro señor.



Handwritten manuscript of *Canterbury Tales* (c. 1430-40) is one of two 15th-century Chaucer manuscripts in the collection.

First edition of Miguel de Cervantes' *El Ingenioso Hidalgo Don Quixote de la Mancha* was published in Madrid (1605-15).

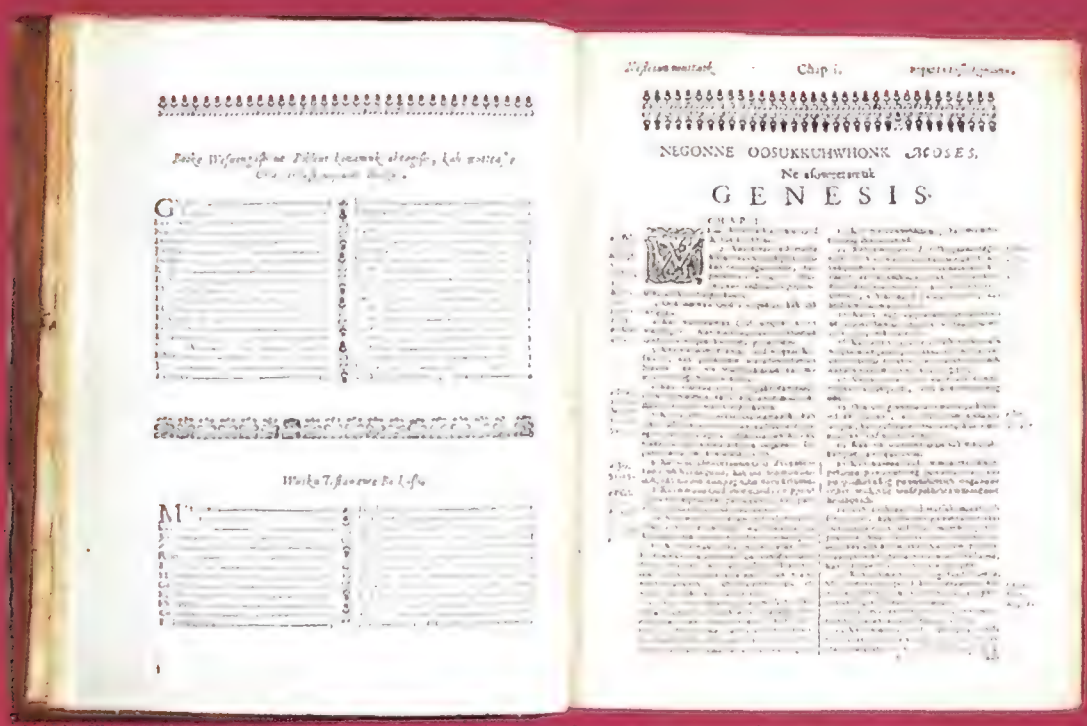
TO THE TOWER OF LONDON WHEN COMMITTED FOR LIFE AND THE ONLY ONE OF THE FOUR WHICH HAS SURVIVED TODAY," and his mouth could not help slavering.

With his combination of scholarly knowledge, wide reading and a sixth sense acquired from those endless hours in his Uncle Moses' shop, Rosenbach could spot treasures that would slip by the ordinary book dealer unobserved. Once, in England, he was at an auction sale on a commission to buy books for Henry Huntington. A small religious tract came up and was passed around to be examined by the dealers attending the sale. It was terribly dull, terribly uninteresting for 20th-century tastes. Rosy's eye was caught by its particularly forbidding title page: *Daily Meditations; or Quotidian Preparations for and Considerations of Death and Eternity* by Philip Pain, printed at Cambridge by Marmaduke Johnson in 1668. It occurred to him that the Cambridge here might be Cambridge, Massachusetts, and if so, this was the only known copy of the first book of verse published in America. It was worth a fortune. But only Rosenbach bothered to bid for it, and Huntington was delighted to get this treasure for £51 plus 10 percent commission.

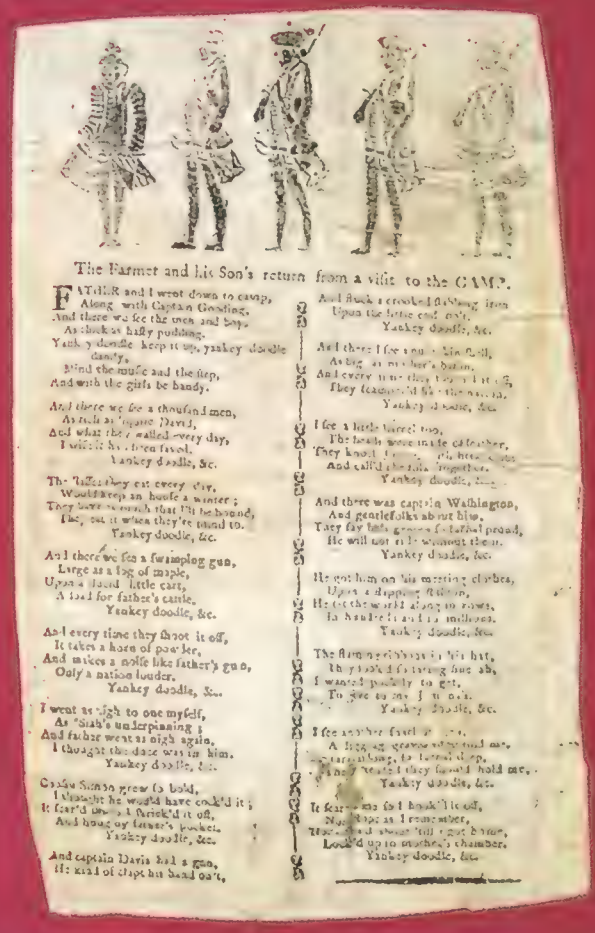
Auctions were the elixir of life to Rosenbach: "Book-buying at auction sales is the greatest sport in the world. It beats hunting, and is far more intoxicating than drink."

Auctions might be his favorite sport, but they did not bring in vast profits, because when the prices he had paid were a matter of public record, it was difficult to raise them excessively high for his customers. The fame that came from the auctions, however, was a pearl of great price. It ensured that the Rosenbach name would reach the ears of impecunious noblemen who owned great old houses and were more worried about death duties and income taxes than about the fate of the dusty old volumes Grandpapa had collected in the library.

One of these houses was Dorchester House in London, owned by Sir George Holford, once equerry-in-waiting to the royal family. Sir George had a passion for raising prize orchids and amaryllids and Javanese rhododendrons, and he had little interest in the Titians and Rembrandts and old books he had inherited. He invited the Doctor over one day in 1925 and turned him loose in the 3,000-volume library. The Doctor chose 131 titles, any one of them enough to make a collector dizzy: "the finest copy extant" of the First Folio of Shakespeare's work, "in absolutely clean and perfect state, and in the original calf binding and with the original blanks—THE ONLY COPY IN THE WORLD IN THIS CONDITION"; a presentation copy signed by Capt. John Smith of his *Generall Historie of Virginia*, 1624; King Edward IV's copy of *Godefroy of Boloyne, or The Siege and Conquest of Jerusalem*, printed by Caxton in 1481; the finest known copy of the first edition of Bunyan's *Pilgrim's Progress*. He agreed to pay £110,000 for them ($534,875) in three months.



Old Testament, as translated into the Algonquian language by John Eliot in 1663, is a rare Indian copy of the Bible.



Only known copy of the first printed version of "Yankee Doodle" was first circulated as a broadside in Massachusetts in 1775.

Living room of Marianne Moore's Greenwich Village apartment was transported lock, stock and barrel to the Rosenbach home. The poet's memorabilia include baseballs from New York Yankees, Brooklyn Dodgers, atop bookcase at right.

Holford wanted the transaction kept quiet, and the books were covered with brown paper and smuggled out in a butcher's cart, disguised as legs of mutton. All the Doctor had to do then was find a half-million dollars, which he did with ease by sending a few cables to U.S. collectors.

There were other eager sellers waiting in the wings. Sir Shane Leslie, a man of letters who knew everyone (he was Winston Churchill's first cousin), offered his services in opening up the country houses of his native Ireland. Their first visit was to the romantic stone pile called Helen's Tower, built by the 1st Marquess of Dufferin and Ava for his mother, granddaughter of Richard Brinsley Sheridan, the playwright. The 3d Marquess in 1929 was in desperate need of cash. He asked Leslie to bring the famous Dr. Rosenbach to see him, and gratefully accepted a check for £500 ($2,440) for about 30 miscellaneous volumes.

As Leslie recalled it, "the noble lord then confessed that his Trustees would not approve the transaction, that they were heirlooms. . . . He asked me to burgle them that night! Fortunately there was no armed watchman. In the darkness I collected each book with a torch and filled an old military sack which my host had produced. Then I hid the lot in a hollow oak in the park. I assured the Doctor all would be well and so it turned out, for to his amazement we stopped the car next day at the old oak and I recovered the books, which he transferred to his suitcases."

The Doctor had complete confidence in his own taste and was always willing to take a chance on contemporary works. At the sale in 1924 of the collection of the New York lawyer John Quinn, he paid $1,975 for the original manuscript of a work that had a considerable underground reputation but had not even been published in the United States, James Joyce's *Ulysses*. When the news reached Joyce in Paris, his rage was boundless. Quinn had bought the manuscript from him for $1,200 and promised that if he ever had to sell it, he would give the author a share of the profits. Now here he was, James Joyce, the greatest writer in the world (though perpetually short of funds), receiving a paltry $240 from Rosenbach, who at the same sale had put out $8,100 for the manuscript of Joseph Conrad's *Victory*. He expressed his feelings in a bit of malevolent doggerel: "Rosy Brook [which is roughly "Rosenbach" in German] he bought a book / Though he didn't know how to spell it / Such is the lure of literature / To the lad who can buy and sell it."

Time, that healer of wounds, took care of this one too. A couple of years later the Doctor went to visit Joyce in Paris. They shared a taste for whisky and became very friendly, and the Doctor walked off with two original limericks he had taken down in his address book. One was about Lady Gregory and "poets in beggary." The other was racier: "There was a kind priest named Delaney / who said to the girls, '*Nota bene*, / 'twould tempt the archbishop / the way that you swish up / your skirts when the weather is rainy.'"

The *Ulysses* manuscript could be sold today page by page for the price of a Learjet. Conrad's reputation has not suffered either—when the trustees of the Rosenbach Museum & Library recently tried to round out their Conrad collection by bidding for the manuscript of *Typhoon*, they had to drop out when it was barely halfway to its selling price of $180,000.

The Doctor never sold items like these that he particularly loved. He loved books more than money. His ideal business operation was like the one he made with the cathedral in York, which ended up with his selling half the books he had bought for a profit of about 115 percent and keeping the rest—including the

magnificent *Mamusse wunneetupanatamwe up-biblum God naneeswe nukkone testament kah wonk wusku testament*, John Eliot's translation of the Bible into Algonquian, in its original binding—to pore over and gloat over and fondle all the rest of his life (p. 111).

And that is why people come, in a small but steady stream, with the quiet, discreet tread of the book lover, to visit the Rosenbach Museum & Library on DeLancey Place in Philadelphia. (The rare books and manuscripts are available to scholars by appointment.) It occupies the last house where the brothers lived and kept their treasures before they died, A.S.W. in 1952 and Philip in 1953. The first two floors are full of a selection of Philip's furniture and curios. On the third floor is the library where the Doctor spent most of the last two years of his life, in a vast armchair, racked by diabetes, surrounded by memories of his quests and conquests in the world of books.

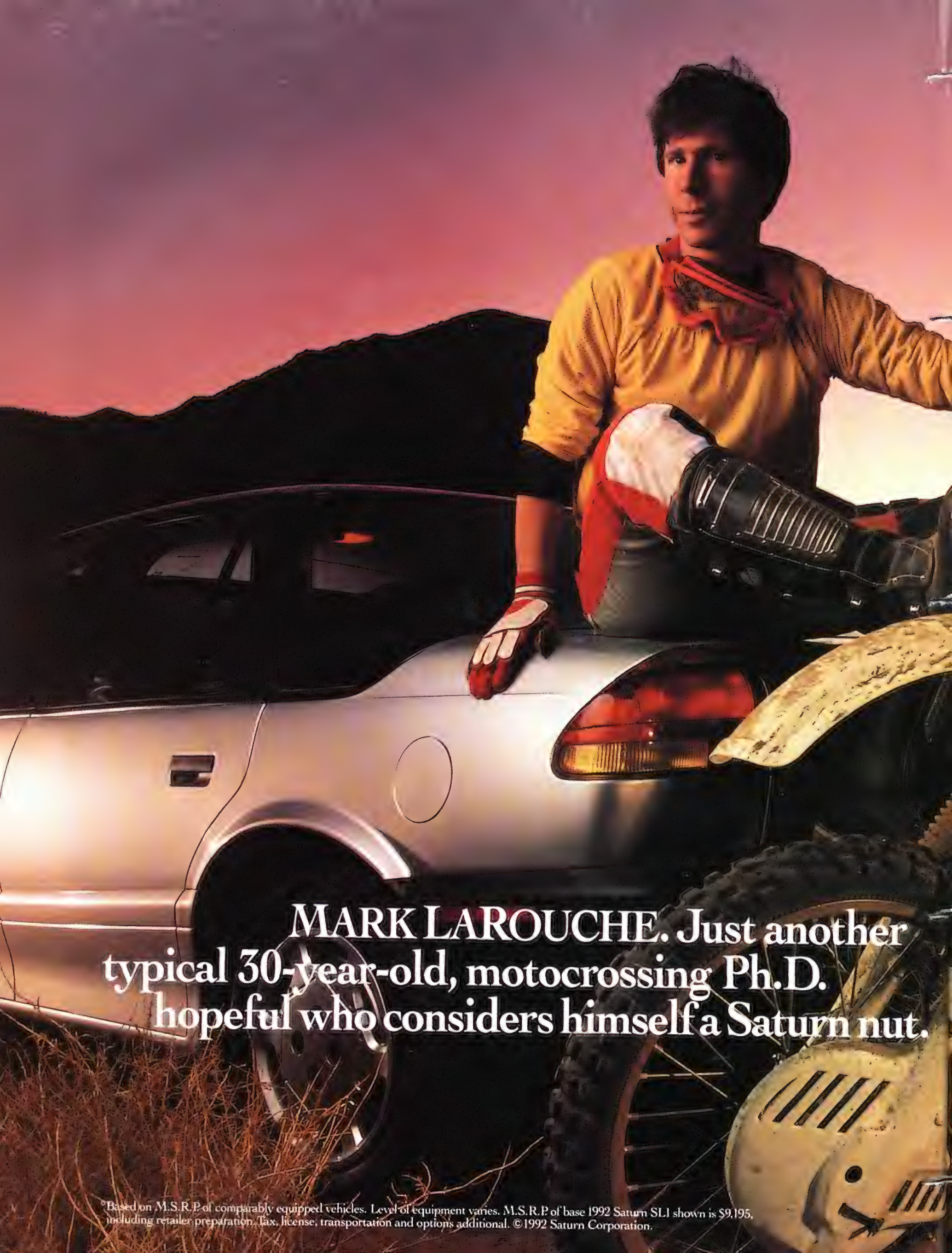
The trustees of the Rosenbach Museum & Library have made this one of the most charming small museums in America. They have made a few bibliographic additions of their own: a long-term loan of the complete set of drawings from the children's books of Maurice Sendak; a room turned into a replica of Marianne Moore's living room in Greenwich Village, with all her books and correspondence with other poets and her baseball memorabilia.

The rest is pretty much as the Doctor left it, bookcase after bookcase stuffed with the cream of the 300,000 printed volumes and manuscripts that were his legacy to book-loving mankind.

Here the bibliographic pilgrims file reverently past Rosenbach's children's books and his dime novels, his collection of treaties with the Indian tribes, his letters of the Presidents, his first editions of *Robinson Crusoe* and *Pilgrim's Progress*, Hawthorne's copy of *Moby-Dick*, Rudolf of Habsburg's suicide note at Meyerling, the only known copy of the first printing of "Yankee Doodle," Lord Byron's marriage certificate, a copy of the Bay Psalm Book (the first volume printed in the English colonies in America), a patent from King Charles II permitting women to appear on the London stage, the manuscript of *Ulysses* (below), the original of General Grant's telegram to Washington, D.C. announcing the surrender at Appomattox . . .

You do not have to be a bibliophile to sense beside you, as you pass these charmed relics, the presence of a portly little man wheezing with excitement and whispering in your ear, "This is the goddamnedest copy you ever saw."

Original manuscript of James Joyce's *Ulysses* is shown with the author's death mask. Joyce was outraged that Rosenbach got the manuscript at 1924 auction for $1,975, yet had paid $8,100 for Conrad's *Victory* at the sale.



*Based on M.S.R.P. of comparably equipped vehicles. Level of equipment varies. M.S.R.P. of base 1992 Saturn SL1 shown is $9,195, including retailer preparation. Tax, license, transportation and options additional. ©1992 Saturn Corporation.

That's him, our man in the mud, Mark LaRouche. Husband to Maureen. Father to Wade. Slave to fun.

The future doctor here (he's closing in on his Ph.D. in Computer Science) not only has his intellectual pursuits, he has a real thing for knobby tires and flying dirt clods.

Certainly not the sort of guy too likely to settle for some meek car with an anemic little powerplant. Which is why, after nixing the idea of buying a Honda Accord when he discovered the little numbers on the sticker weren't so little, Mark jumped all over the SL1.

In his words, "the SL1 not only swivels heads in the performance department, it was equivalent to an Accord in every other area we felt was important to us, for a lot less.*" Needless to say, it's not like Mark needed a doctorate to sort that one out.

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As a result, the LaRouches have a car they like, with a pocketful of money left over. So much, in fact, they're about to start looking for a new house. After, of course, Mark does something about taking a shower.

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Howard Pyle's 19th-century engraving shows Salem trial with the accused praying, and accusers in the first row howling and pointing. Horseshoe-pronged staffs are the artist's fanciful idea of anti-witch devices.

By Bruce Watson

Salem's dark hour: Did the Devil make them do it?

Three hundred years later, no one really can say what in heaven (or hell) possessed the 'witches' of Salem—or their accusers

Through the power of prayer, a minister tries to deliver a young Puritan woman from her "affliction."

In witchcraft's colorful lore, one episode stands out in black and white. Black: the witch's dress and hat, the Puritan garments and the shadows of a town hunting its own. White: the bonnets of Puritan girls, the crowd of pasty faces on Gallows Hill, a silhouetted summer moon, innocence.

Until 1692, when they swarmed out of their dens and into history, the witches were a secret all over the village. Sarah Good was a witch. Her own husband said so. Penniless, broken, she smoked a pipe and begged from house to house. If anyone refused her, the craggy old witch went away muttering, and it wasn't long before trouble darkened the door. A cow died for no reason. A child screamed as if pinched. Fever came. Sarah Good was a witch, all right. But who else had signed Satan's book?

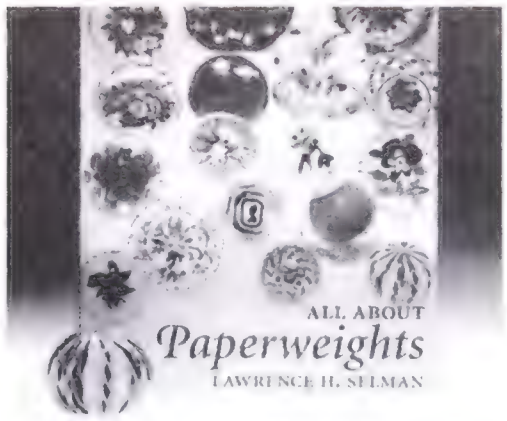
That Bishop woman, Bridget. *Three* husbands she'd had, and still she strode around the village in that bright red bodice. She owned an inn and "entertained" travelers and young people, drinking and playing games, "whereby discord did arise in other families, and young people were in danger to be corrupted." They said her specter came into men's houses at night and lay upon them so they couldn't breathe. All over town, there was talk.

Sarah Osborne, now there was a witch! Hadn't been to church in months and was said to be living in sin. And didn't old Martha Corey laugh derisively at the very idea of witchcraft? One of these days, though, the witches would get their due. One of these days, the whole world would know the truth about Salem.

By February of this terrible year, something was gripping the young girls of Salem Village, something neither doctors nor ministers could divine. Betty Parris, the local minister's own daughter, was in a trance, hands frozen in place, uttering the most hideous gargles and growls. Prayers did no good. "Our Father which art . . ." set her screaming. Soon her cousin Abigail began crawling around the house, under chairs, barking like a dog, stomping her feet. "Their arms, necks and backs were turned this way and that way," another minister wrote, "so as it was impossible for them to do of themselves, and beyond the power of any epileptic fits or natural disease to effect."

Satan was up to his old tricks. In Boston only a few years before, the tongues of innocent children were yanked to their chins, their jaws snapped open and shut, their limbs corkscrewed like branches. A witch, old Goodwife Glover, had been tried and hanged. Now it was Salem's turn, and the fits quickly spread among the girls, starting with 9-year-old Betty.

None dared call it witchcraft, but Salem's girls, curious about their futures, were up to some mischief. Thrusting a key into a Bible, they read the verse it touched as prophecy. And they read palms until Abigail



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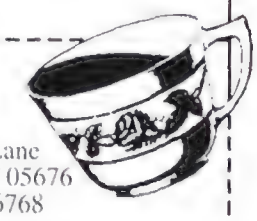

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A key figure in trials, Tituba, the Reverend Parris' West Indian slave, told Salem girls' fortunes and was accused of teaching them sorcery.

Williams spread the word of a better oracle. Come to the Parris kitchen and meet Tituba. She floats an egg white in a glass. It tells your fortune. All that winter, girls met with the Rev. Samuel Parris' West Indian slave to learn "what trade their sweethearts should be of."

Among the futures in Tituba's glass, the milky shape of a coffin spread panic. Only a few weeks later, Dr. William Griggs, unable to find a medical cause for Betty and Abigail's fits, declared: "The evil hand is upon them!" Suddenly events quickened and the girls were no longer mere girls. Ministers surrounded them, demanding, "Who torments you?" When the girls gave no names, names were suggested. On February 29, three women were charged with witchcraft. Then, as spring gave way to summer, Salem itself fell into a series of fits that has made its name synonymous with sorcery ever since.

Three hundred years after the most infamous witch-hunt in North America, covens of tourists are descending on Salem to hunt for history. With ongoing symposiums and exhibits, costumed Puritans walking the streets, and productions of Arthur Miller's *The Crucible* and other dramas, Salem and nearby Danvers are commemorating the tercentenary of the trials. All summer, explanations and theories will fly like broomsticks. But by Halloween, when most of the goings-on are over, the events Puritan minister Cotton Mather called "the wonders of the invisible world" will be as much a wonder as ever.

For centuries, historians have branded Salem's witch-hunters as hysterics, fanatics and liars. But does anyone understand why in one hellish summer the town filled its jails, turned a bucolic knoll into "Gallows Hill," hanged 19 people, tortured another to death and then, only four years later,

hung its head in shame? If this is witch-hunting, where should the hunt begin?

Begin here: "Thou shalt not suffer a witch to live"—Exodus 22:18. Despite God's commandment to Moses, witches and wizards practiced their craft from biblical times until the Middle Ages. Only when the medieval world began to crumble in the 1400s, with scapegoats needed and power up for grabs, did the hunt begin in earnest. In 1486, witch-hunting received its own bible, *The Hammer of Witches*. Written by two Dominican scholars with papal approval, the book became a best-seller of sorts by explaining in painstaking detail how witches torture, possess and kill the innocent, especially children, and how authorities should judge and execute the wicked.

In one of humanity's darkest chapters, fires blazed beneath tens of thousands of witches throughout the Protestant Reformation in the 16th and 17th centuries. In England, where witchcraft was a crime against the state, punishment was more merciful—hanging. In Presbyterian Scotland, where the hunts were especially rabid, witches were often hanged, then burned. By 1660, the worst was over in Europe. But New England's Puritans, still few in number and isolated on the edge of forests primeval, had their own demons to hunt. "If ever there were witches, men and women in covenant with the Devil," thundered Salem's Reverend Parris from the pulpit, "here are multitudes in New England."

On March 1, 1692, most of Salem Village took a holiday. Dressed in its Sunday black and white, an overflow crowd pressed into an icy, wooden meetinghouse. Two stern judges had come from nearby Salem Town to examine the accused. Amid commotion and gossip, they set the bewitched girls on a bench and at last brought the first witch to the bar. Sarah Good was a witch, all right. Listen.

Last month, Bruce Watson wrote for SMITHSONIAN *on Ambrose Bierce.*

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"Sarah Good, what evil have you familiarity with?"

"None."

"Have you made no contract with the Devil?"

"No."

"Why do you hurt these children?"

"I do not hurt them. I scorn it."

Then why did she go away from the Reverend Parris' house muttering? Muttering her commandments, she replied. She spoke "in a very wicked, spiteful manner," the clerk noted, but in these grand jury proceedings, the judges needed more proof. They needed an evil eye.

Judge John Hathorne instructed the girls to look at Sarah Good. Casting their eyes on the twisted woman, Betty, Abigail and their friends screamed, writhed, swooned.

"Sarah Good," he asked, "do you not see now what you have done? Why do you not tell us the truth? Why do you thus torment these poor children?"

Clearly, something was torturing the girls. Sarah Good claimed that "it was Osborne" who did it. Sarah Osborne, ill and dragged out of bed into custody, claimed to be more bewitched than bewitching. In a dream, a "thing like an Indian, all black," had pricked her neck and pulled her out of bed. Everyone knew Osborne's "thing." He was a celebrity in Salem, cursed by every tongue, the archnemesis behind every form of malice. But never did goodmen and goodwives expect to see Satan torture the innocent in the Salem Village meetinghouse. The crowd pressed closer as Tituba herself stepped to the bar.

Beaten by the Reverend Parris, the slave had learned to tell Puritans what they wanted to hear. "The Devil came to me and bid me serve him," she confessed. She told tales of blood-red cats, red rats, witches' Sabbaths,

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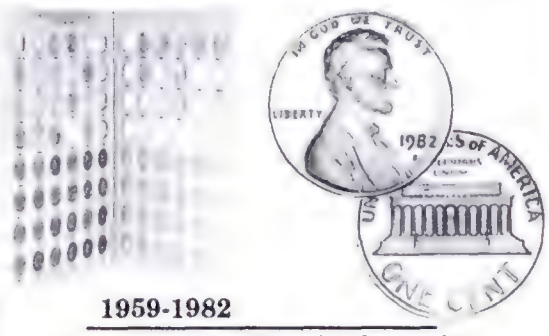

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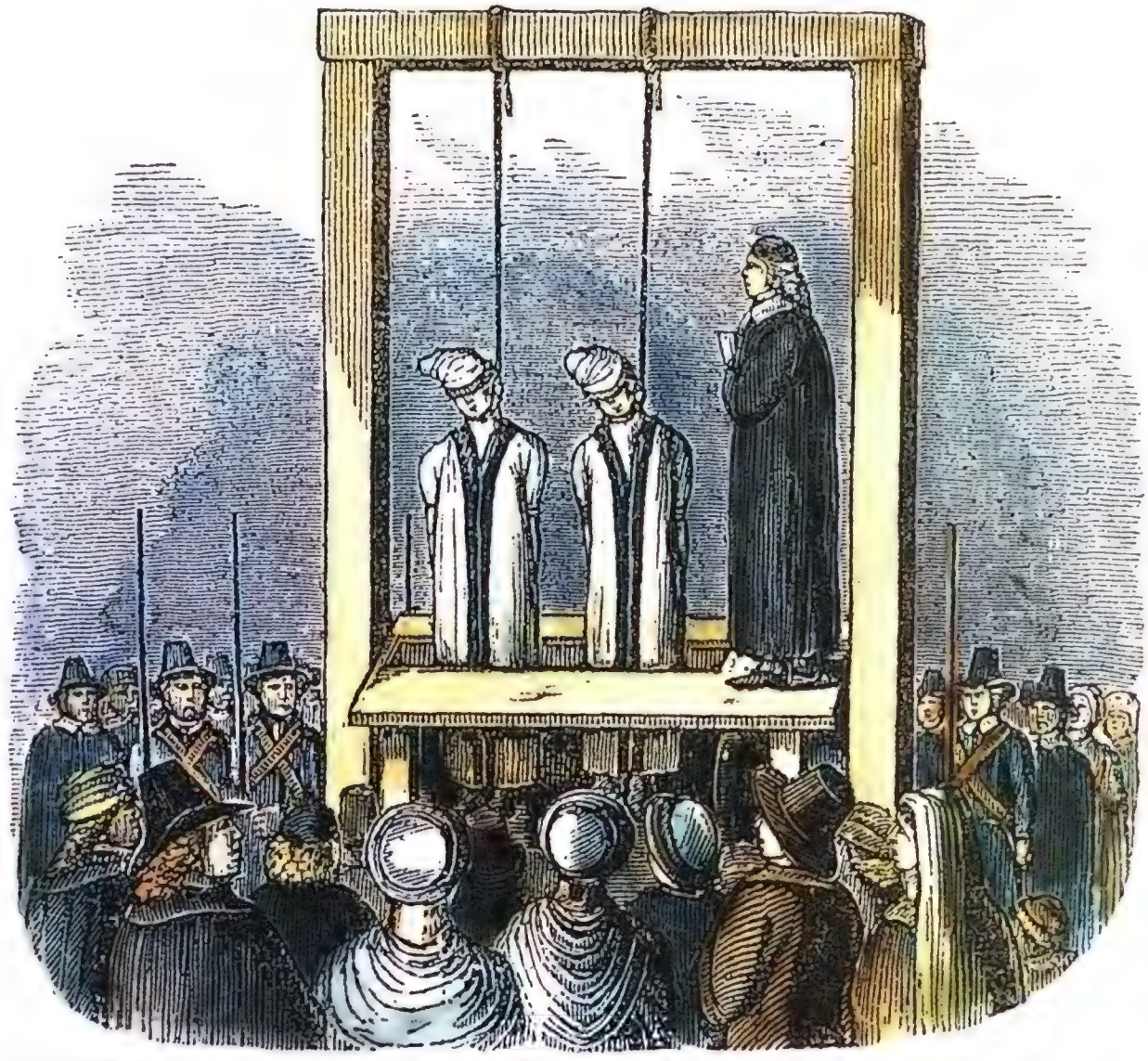


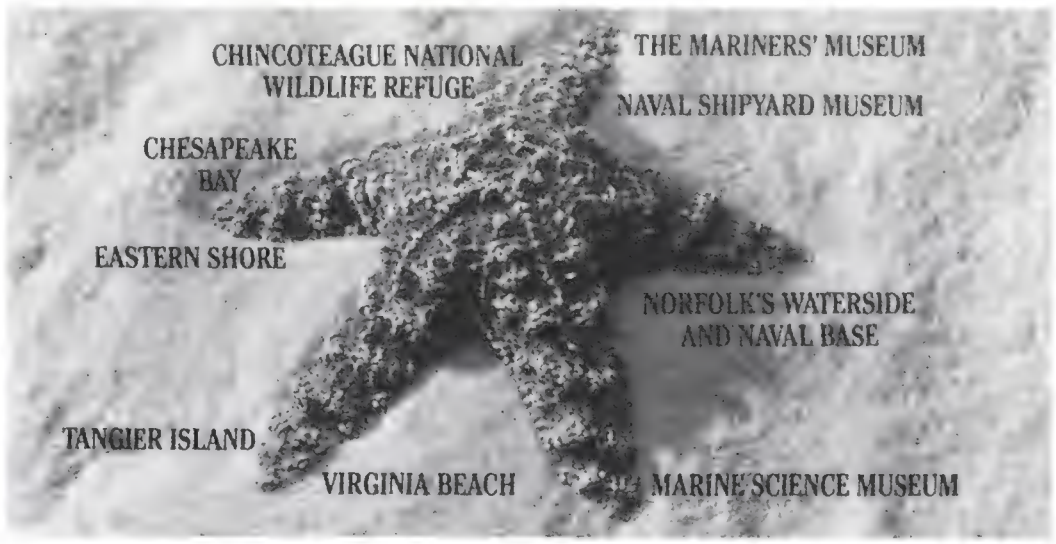
In 1692, nineteen people were found to be witches and hanged on "Gallows Hill." Four years later, a judge and 12 jurors publicly repented.

and demonic creatures kept by Sarah Good and Sarah Osborne. Satan had offered Tituba a book to sign. Sarah Good's blood-red mark was in it, Sarah Osborne's too. And when Tituba signed, she saw six more marks.

In a world half the Devil's, half their own, lashed by storms, haunted by fear of Indians who seemed to some the Devil incarnate, the Puritans' daily lives were marked by hardship. In such a world, what today would seem trivial were deadly sins. Malice, envy, anger, pride, opened the door for Satan and his advance guards. Witches entered bedrooms late at night. A devil had sat at Christ's table, and now Tituba's magic had loosed the Devil among them. "We are either saints or devils," the Reverend Parris preached. "The scripture gives us no medium." Black or white. Once the Devil entered, it was time to choose sides.

To which side did the girls belong? Were they truly possessed, or merely possessed by fear of the spells and curses floating around Salem? Were they "great actors," mischievously deceiving their elders, as a Salem mayor charged in his 19th-century history? Did they suffer from "mass hysteria" caused by Puritan repression, as Freudian analysts have suggested? Or did a hallucinogenic fungus in bad rye twist their arms and prick their skins, as a psychologist hypothesized in 1976? Each theory has its converts and its foes. Through history's milky glass, the real demon is no more certain than a specter. But modern historians, leaving the girls to their fits, are asking what possessed Salem itself. In a village of true believers, the Devil's door has many keys.

Witchcraft, writes Yale historian John Demos, was a gauge of "social strain." Historians have long noted that the Salem outbreak occurred during a time of trouble. A power struggle between the Puritan Colony and the king had left Massachusetts adrift, without a governor, a royal charter or any legal system. The faithful were shaken by epidemics, Indian



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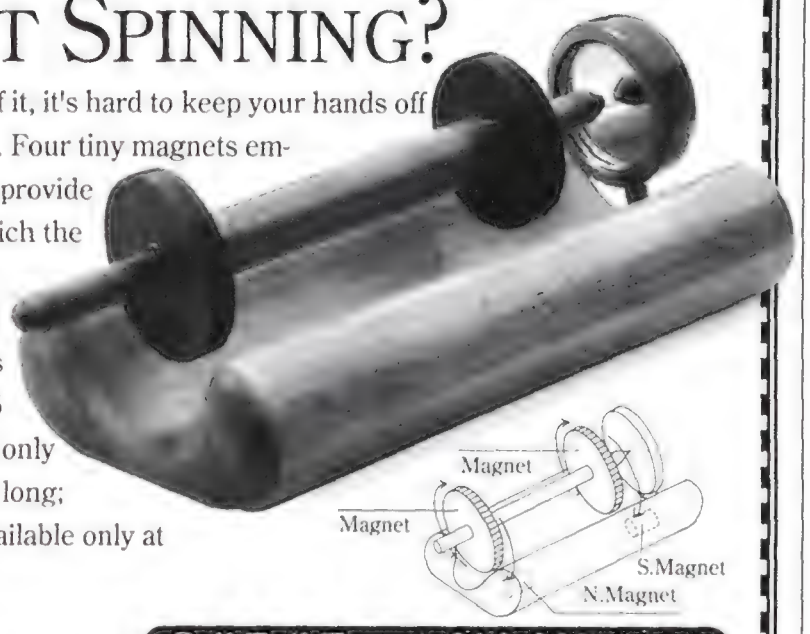

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Cotton Mather believed in witches but required more than "spectral" proof.

wars, and ideological clashes between thriving merchants and simple Puritan farmers. Driven by such tensions, Puritans brought witchcraft out of the closet and into the courtroom, rounding up the usual suspects.

Portrait of a witch: old, twisted, warts on the nose, pointed hat, riding a broomstick and cackling, "Well, my little pretty!" Hollywood's image is hard to shake, but new colors are enhancing the portrait.

Most New England "witches," Demos writes in *Entertaining Satan*, were poor women over 40. Some were healers or midwives who had lost a patient or miraculously saved one. They were abrasive, quarreling with families and neighbors, often involved in lawsuits. They were, in a word, misfits. The label fits Salem's first accused like a pointed hat. Sarah Good, a beggar, Sarah Osborne, a hermit and heretic, Tituba, a slave, were dragged into court where neighbors came forth to testify about their every evil deed. Elsewhere in New England, where more than a hundred were accused and 16 executed for witchcraft before Salem, a few bodies swinging from the gallows deeply etched the line between good and evil, and stabilized society, Demos writes. But Salem

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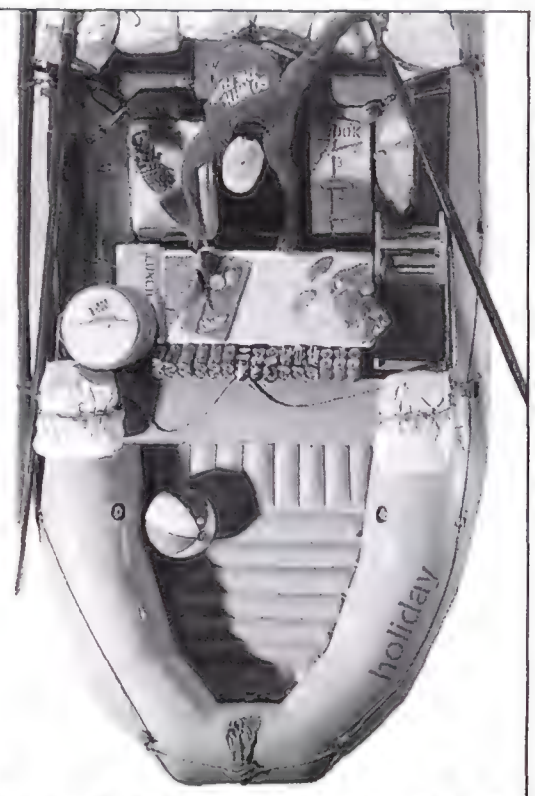

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was not so easy. Something about Salem was different.

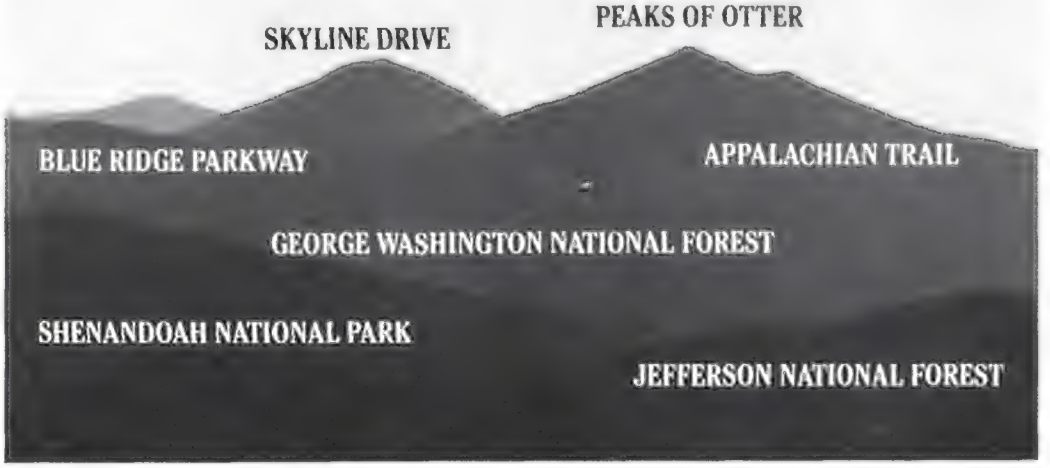
By mid-March, Abigail Williams was flapping her arms, shouting "Whish! Whish!" and throwing burning logs around the Parris living room. In church she called out, "Look, there sits Goody Corey on the beam suckling a yellow bird betwixt her fingers!" The frightened gaze of the flock rose to the beam. Salem was jittery now, ready to believe in invisible wonders.

Accused and called before the judges, Martha Corey protested, "We must not believe these distracted children." But the distracted children did more than speak. When the witch shifted her feet, the girls shifted their feet. When she clenched her fingers, the girls cried that they were pinched. When she bit her lip, they screamed, bled and showed tooth marks.

Salem had been warned about specters. Because the devil might come clothed in anyone's shape, even Cotton Mather discounted the conclusiveness of purely "spectral evidence" in witch trials. A witch is proved a witch, Mather said, only by confession, possession of voodoo dolls, pins and "poppets," or witch's teats—flaps of flesh used to suckle Satan himself, searched for and found in the merest birthmark. But Salem Village chose to believe its children. Through most of the trials, the judges took evidence as thin as a ghost as proof of the worst crime imaginable.

Once it became clear that anyone's specter could be blamed, anyone was fair game. Anyone. Rebecca Nurse was a pious, gray-haired churchgoer. "I never afflicted no child," she said meekly, "no, never in my life." But before the icy stares of her neighbors, she cried out "Oh, Lord help me!" spread her hands, and the girls swooned. She was jailed to await trial. Beside her was Dorcas Good, Sarah's daughter, whose specter had bitten the girls. Dorcas Good was kept in chains for nine months. She was 4 years old.

"Rebellion is as the sin of witchcraft," Mather preached, and fearing



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Outspoken Martha Corey was jailed and hanged for witchcraft. Even in prison she railed at the authorities.

Rather than testify, Martha's husband, Giles, let himself be crushed to death with stones.

the devil more than each other, Salem made rebellion tantamount to sorcery. A constable who refused to arrest more witches was accused and jailed. John Proctor said if the girls were not stopped, "we should all be devils and witches." Proctor and his wife were next. "Dear child, it is not so," Elizabeth Proctor pleaded to the accusing Abigail Williams. "There is another judgment, dear child." But the fear was contagious. Seeing specters, the girls called out in court, "There is Goodman Proctor going to Mrs. Pope," and Mrs. Pope fell into fits. "There is Goodman Proctor going to hurt Goody Bibber," and Goody Bibber fainted. The girls had won. The witch-hunt was on.

From out of their dens came neighbors renewing timeworn vengeance, settling old vendettas. In April and May, more than 60 people were accused, including an ousted clergyman, prominent merchants, anyone who had dared to make an enemy. In June, with the jails bursting, formal trials began. For those who could explain their specters, confess or escape, life might go on. For the rest, a sturdy gallows on a nearby hill was fitted with a noose.

Before Salem, New England witches had been the subject of rumor, gossip and an occasional trial. Why did Salem alone turn witch-hunting into a craze? The answer, say two historians, lies not in Satan but in sociology: in 1692, there were two Salems. Salem Town was a prosperous coastal community with a thriving maritime trade, an established church and government, and stable families. But a few miles inland, Salem Village (now Danvers) was a troubled backwater where, as one villager said, "brother is against brother and neighbors [are] against neighbors, all quarreling and smiting one another." With no town government to arbitrate, village feuds festered. In 1687, three mediators from Salem Town, come to settle a church dispute, predicted that unchecked village quarrels might someday "let out peace and order and let in confusion and every evil work." Salem was no city on a hill, say historians Paul Boyer and Stephen Nissenbaum in *Salem Possessed*. Salem was an inner-city on a hill.

At the heart of Salem's discord was a Hatfield-McCoy feud. Throughout the 1680s, the Porter family gained land and influence in the church while the Putnam family lost both and vowed vengeance. Come 1692, three "afflicted" girls in the Putnam household, together with parents, in-laws and cousins, testified against at least 46 accused witches, many from the Porter camp. The feud, coupled with factions split by the contentious Reverend Parris, made Salem a house divided against itself.

By June, the Devil's door was wide open. All over Essex County, humble Puritans saw Satan under every bed, and God help anyone who saw differently. Witches were hunted down in Amesbury, Topsfield, Haverhill, Gloucester, Ipswich. In the raucous courtroom all summer, the storied girls fell into agony at the slightest glance. Neighbors testified to seeing shapes by night, teasing, tormenting, choking. The jury deliberated. Down came the gavel. Guilty, guilty, they were all guilty.

During that zealous summer, there were moments when reason might have triumphed. After Bridget Bishop was hanged on June 10, one judge resigned in protest. Boston ministers cautioned against spectral evidence, and neighbors signed petitions supporting the accused. At the next trial, despite testimony by several Putnams that Rebecca Nurse's specter had murdered six children, the jury returned with its verdict. Not guilty. Bedlam tore through the courtroom. The girls howled, their convulsed limbs snapped, until the startled judges ordered the jury to reconsider. After further questioning, the jury gave a different verdict. The governor, petitioned by Nurse's family, granted the old woman a reprieve, but when the

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girls heard about it, they fell into fits and were said to be near death. The reprieve was rescinded.

On July 19, Rebecca Nurse and four others rode a creaky oxcart past jeering crowds to Gallows Hill. With the noose around her neck, the muttering witch Sarah Good no longer muttered. "I am no more a witch than you are a wizard!" she shouted at a minister. "If you take my life away, God will give you blood to drink!" Legend has it that the minister drank blood years later, dying of a hemorrhage. The curse also haunted Judge Hathorne's great-great-grandson Nathaniel who, after adding a *w* to his last name, used the threat of "blood to drink" as the linchpin of his novel about a Salem house with seven gables.

Following July's hangings, the Devil knocked on other doors. After the Salem girls were called to Andover to detect witches, more than 50 were jailed there, and a dog was executed for witchcraft. Crammed into jails, the accused dared not hope for justice. On the eve of their trials, a few escaped with the help of friends. Others, noting that Tituba still hadn't been tried, confessed and were spared. But the most devout believed that lies brought a more lasting judgment, and rode their innocence toward heaven.

On August 19, five more were hanged, another eight on September 22. "What a sad thing to see eight firebrands of hell hanging there," said a minister. "Sad" wasn't quite the word for Giles Corey's fate. Accused along with his wife, the bitter, iron-willed man would lose his land if convicted, land he had willed to his children. But if he refused to testify, the court couldn't pass judgment. So the 80-year-old Corey remained silent. Laid beneath a wooden plank, he was pressed with heavy stones. Would you talk now, Giles Corey? More and more stones were piled on. After two days, with his tongue pressed far out of his mouth, his only comment was "More weight." Finally he was crushed to death, but his land stayed in the family.

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Three-fourths of Salem's accused were women, including 14 of the 20 executed. Witchcraft, writes Carol Karlsen, a University of Michigan historian, "confronts us with ideas about women, with fears about women, with the place of women in society, and with . . . systematic violence against women." In *The Devil in the Shape of a Woman*, Karlsen explains how Puritans both constrained and exalted women. Woman was wife, mother, "helpmeet," handmaiden of the Lord, and those who did not fit this holy mold were surely handmaidens of the Devil. Among the accused throughout New England, Karlsen finds women who dared to fight for an inheritance, childless women, adulteresses, single women, women involved in lawsuits, and "troublemakers" like Bridget Bishop. Their common sin, Karlsen writes, was refusal to knuckle under to the Puritan patriarchy.

Accused men were most often witches' husbands or sons, but men

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themselves leveled three-fourths of the accusations. They told of dreams in which female figures sat on their chests, making it difficult to breathe. And girls, the most frequently bewitched, used witchcraft to vent their jealousies. Many of Salem's "afflicted" girls, including Abigail Williams and other vehement accusers, had lost their fathers, Karlsen notes. Fatherless girls might wonder "what trade their sweethearts should be of," but having no father and therefore little or no dowry, they were mostly bound for spinsterhood. Claiming vengeance as theirs, they lashed out at targets named by their elders. It was an approved form of rebellion, Karlsen writes. Blasphemy led to whipping, but if the Devil made them do it, the young girls became the most important people in town.

"The little crazy children are jangling the keys of the kingdom," Arthur Miller has John Proctor proclaim in *The Crucible*, "and common vengeance writes the law!" More accused might have gone the way of all devils had not Truth at last put on its boots.

Increase Mather, Cotton's father and president of Harvard College, believed in witchcraft but was skeptical about Salem. When a parishoner took his sick child to Salem for a diagnosis, the elder Mather had seen enough. "Is there not a God in Boston that you should go to the Devil in Salem?" he demanded. On October 3 his sermon condemned the trials. "We ought not to practice witchcraft to discover witches," he said. "It is better that ten suspected witches should escape than one innocent person should be condemned." In sermons, other ministers doubted that so many could "leap into the Devil's lap at once." During the trials as well, almost 300 citizens had signed petitions or testified on behalf of the accused.

The girls struggled to maintain their power, "crying out" on ministers' wives. But soon after they accused his wife, Gov. William Phips stopped the trials, on October 29. Of the remaining witches, 52 were tried in 1693 without the use of spectral evidence. Three were convicted but pardoned. The hunt was over.

After 1692, with most authorities loath to bring another Salem upon their town, the Devil again dwelt in rumors. England executed its last witch in 1712, Germany in 1775, Switzerland in 1782, but no more witches were put to death in the Colonies. Broomsticks, spells and witches' Sabbaths became the stuff of folklore rather than law.

When the bloodletting stopped and time soothed Salem's fears, the guilt poured forth. In 1696, first a judge, then 12 of the jurors publicly repented. Even Ann Putnam jr., one of the most afflicted girls, apologized. In 1711, the state paid survivors of the executed sums of £7 to £150 and reversed the convictions of all but seven who, having no family come forward to demand a pardon, remain guilty on the records.

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Senator Joseph McCarthy (right) made "witch-hunt" relevant to 1950s.

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Witch-hunts clarify good and evil wherever rapid change has muddled the moral waters. Cry "Witch!" or something equally scandalous, and suddenly malice has a human face and a bewildering world becomes simple again. "There were many levels of resonance," writes historian John Demos of New England's hunts. "There was the naming, the locating, the making tangible, of what had hitherto seemed obscure. . . . And there was, at the end, a decisive act of repudiation. *The Devil is in Elizabeth, not in me. The evil is there, not here.* Thus did the beholders sound their own depths, sorting the good from the bad. They emerged—one imagines—with a stronger, sharper sense of themselves. They were cleansed."

When social tensions mount and accusations fly faster than reason can counter them, the specter of a witch-hunt returns. The most notorious witch-hunt in modern America was led not by a preacher but by a politician hunting a devil in the shape of a

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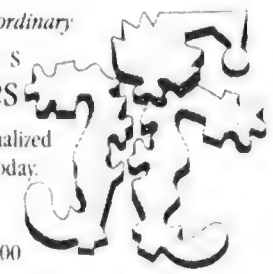

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hammer and sickle. By the early 1950s, tensions built by the Cold War and the Atomic Age needed a scapegoat. Along came Senator Joseph McCarthy with a long list, and out of the woodwork came the timid and the vengeful, ready to testify. Not from historical interest did Arthur Miller write *The Crucible* in 1953, but to blame his country and his countrymen for the injustices of McCarthyism.

Since then, the term "witch-hunt" has been used loosely by virtually anyone faced by a pack of accusers. Dissenting Congressmen tried to call Watergate a witch-hunt, but the evil seemed real enough and the accusers too rational to make the term stick. Most recently, some have drawn parallels between Salem and the child abuse trials of more than a hundred teachers and day-care workers in the 1980s. Noting similarities—the testimony of children, the claims of ritual Satanic abuse, the indefensible infamy of the crime itself—all sorts of commentators have liberally referred to the trials as witch-hunts.

Three hundred years after the Devil came to Massachusetts, "witchcraft" is in revival. One group is Wicca, a neo-pagan religion that claims to revere Nature and to have no Satan, and wishes "to harm no one." Salem itself has more than 2,500 practicing witches with their own newsletter and five witch-supply stores, and Boston has a radio program for witches. Some say there is reason for concern. Satanic cults are sensationalized on TV talk shows, while several popular books on Satanism insist that devil worshipers sacrifice 50,000 Americans a year. "He who believes in the Devil, already belongs to him," Thomas Mann wrote, and a 1989 Gallup poll showed that 37 percent of Americans believe Satan exists. Doubters need only stroll past the red-and-black covers of drugstore paperbacks or descend into the horror section of a video store to find plenty of blood to drink.

Will these uncertain times bring more witch-hunts and public trials? For answers, we might consult Salem's Crystal Chamber, a downtown store offering fortune-telling and psychic readings. We might thrust a key into a Bible, even float an egg white in a glass. But given the denouement of Salem's dabbling in prophecy, perhaps it's best not to knock on that door.

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Book reviews

Neighboring on the Air: Cooking with the KMA Radio Homemakers
Evelyn Birkby
University of Iowa Press, $14.95

One of my sisters has my mother's recipe box, and she brought it with her on a visit home when I, too, happened to be there. I had not seen the box for years. The recipes inside date back to the late 1940s, and they are in several hands—my mom's predominantly, her mother's, her mother-in-law's. The recipes are Iowan. What they reflect is a desire for substance, even elegance, sadly alloyed by a shortage of time—too many kids, too much garden, too much house—and, despite it all, in my mother's case, a great deal of happiness. Since leaving home I have often joked with friends about the food I ate as a kid, and I have always felt guilty about it. I know what a compromise that food represented, even when it was presented with pride.

Among the recipes in that crowded box was one that particularly struck me, a recipe for a cake or a bread, I can't remember which. Most modern recipes are timed in absolute terms: simmer for ten minutes, any ten minutes in the day. But this recipe was timed in relative terms, such as: when you've finished doing the breakfast dishes, mix these ingredients and set aside. When you put the coffee on for lunch, add these ingredients and stir. When the older children get home from school, it's time to warm the oven. And so on and so on. Whoever wrote that recipe—it is in a hand I don't recognize—counted on the familiar succession of a homemaker's hours, as steady as the succession of seasons, the gradual ascendancy and decline of the Big Dipper.

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All the other recipes in the box were an antidote to the idea of time implied in that one recipe. They are full of brand names of cans and boxes and packets that need only opening and stirring and setting for spectacular results. They take it for granted that a modern homemaker will cook as quickly as she can, in the intervals of other housework. My family once assembled a small cookbook, and I used to say that it was full of recipes that could be prepared with a baby on your arm and a can opener on the counter. Add to that, now, a microwave. In Iowa, in the years when I was growing up there, the old Jean Stafford line about a cookbook called *Cooking for One While Drunk* would not have been funny. Having only oneself to please was a luxury.

What I think about now when I think about my mother's cooking are not so much the cans of mushroom soup that went into the endless casseroles, the crumbled potato chips used as topdressing, the pale vegetables in their pale baths, nor even her genuinely superlative baking. What I think about are the circumstances that made such cooking seem apt. Both my parents were from Iowa farm families, one remarkably successful, the other (my mom's) much less so. It did not matter whether you farmed well or not, whether you made a go of it or took to factory work as an alternative. There was never enough time. In my mom's recipe box, it is not hard to see the faces of all the women around her, her friends and neighbors and female relatives, whom she came to count on for shortcuts to a suitable meal, something her husband and children could eat with the conviction that, at the very least, it would do them good.

Whether my mother listened to the Radio Homemakers of KMA Radio, in Shenandoah, Iowa, I do not know. We lived in broadcast range. But I can tell you this. As I read Evelyn Birkby's *Neighboring on the Air*, a history, with recipes, of the KMA Radio Homemakers, I paused over every photograph. I recognized all the faces. Here were the women who lived all around our town, women of brusque assurance in a kitchen, women whom my mother, I am certain, aspired to resemble. In the photographs they look up from ovens, smiles beaming, for they know that what that oven contains is sweet perfection. They stand at the range, stirring the contents of aluminum pots, and they smile because they can smell the cooking and we cannot.

The KMA Homemakers began broadcasting in the mid-1920s. They were local women, living near Shenandoah in southwestern Iowa, who brought their culinary talents, their cleaning skills, their homemaking hints, their "Katchy Kinks for the Kitchen" to the radio station founded by Earl May, who was in the seed business. They offered sound counsel on homely matters. Helpfulness is a Midwestern virtue, and helpfulness was the principle behind the KMA Radio Homemakers. They broadcast recipes by the tens of thousands into the homes of women who needed all the help, all the encouragement, all the good recipes they could get. They tried to find ways to make life a little easier, and more rewarding, for women throughout the Midwest.

And if you did not happen to grow up in an Iowa family in the mid-'50s, then *Neighboring on the Air* will give

you a taste of it. Some of the recipes, true to life, will make you laugh, such as the one that tops a banana with a maraschino cherry and calls it "Candle Salad" or "Mock Hamburgers" or "Swiss Steak for the Working Woman." But I caution you to laugh lightly, without too much irony in your voice. Cook up some of the dishes in this book, and eat plentifully thereof. Think what a revelation they must have been, coming over the air into the kitchen radio of a young woman still learning how to cook. Think what they must have meant to her family.

Verlyn Klinkenborg, Massachusetts-based, most recently wrote *The Last Fine Time.*

The Pantanal: Brazil's Forgotten Wilderness
Vic Banks
Sierra Club Books, $22.50

For a certain kind of American—energetic, outdoorsy, impatient with excessive comfort, open to new experience—South America offers the most accessible adventure going. Travel a few hours out of any of several South American cities and you can fetch up in wilderness, raw and challenging and full of strange, sometimes alarming, phenomena. Roads fade away, colors brighten, creatures you never imagined appear in rivers and woods, and suddenly it's 1835 and you're on the frontier. Sometimes I wonder if it's all *too* accessible for us overprivileged, overequipped 1990s-style *gringos.* A woman writer I know became separated from the scientists she was traveling with in the Venezuelan rain forest a few years ago and spent a terrifying night alone, hearing jaguars and anacondas with every rustle in the bush.

The point is that the wild blanks on the map are still out there in South America, and still full of secrets, and if you have a few free weeks or months and a tolerance for bureaucracy, among other qualifications, you can still tromp around in them to your heart's content. Writer-photographer Vic Banks of Chicago likes to do his tromping in the fascinating, little-known area of western Brazil known as the Pantanal, a wondrously underpopulated and annually flooded swath of country roughly one and a half times the size of England.

Banks' method is to haul the reader along every inch of the way. He wants to show you what he sees, and he wants you to hear the sounds and smell the smells he does, which is fine with me, but he also wants you to listen to everyone he talks to, which is less fine and sometimes tedious. He's like a traveler who has so much to tell that he just turns on the faucet and lets it flow. The result is artlessness redeemed by journalistic honesty: it's all here, everything that matters about the Pantanal, and beyond that, a status report on the uphill course of the conservation movement in Brazil.

Banks is best when he simply reacts to what he sees, which is the essence of good nature writing. He watches a fledgling wood stork attempt its maiden flight in circumstances that don't permit a mistake: "The chick stands up and furiously flaps its wings. . . . More beating of the wings and there's daylight between the nest and its big feet. It's airborne! At the same instant the bird clears the nest, a strong gust of wind blows it over the side." Down it goes, tumbling out of control, "to the detritus

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litter on the floor of the colony. Instantly it is set upon by black-headed vultures. . . ."

The Pantanal, largely underwater half the year, throbs with life. Caimans, southern cousins of alligators, mass by the hundreds in ponds that persist in the dry season. Dark blue hyacinth macaws, largest of the parrots, breathtakingly beautiful and confined now to the Pantanal and a few other habitats, preen one another, impulsively flop upside down and play tag in the tree where they roost. Roly-poly capybaras, at weights of up to 100 pounds, the world's largest rodent, munch water plants and cool themselves in the mud along what passes for a road in the Pantanal. It grieves me to report that Banks has no firsthand encounters with either jaguars or anacondas, the residents with the most formidable reputations. He complains that everyone he meets saw one or the other last week, a claim I believe because I heard it on my own short-haul rambles in the South American wilds. He does hear about a creature that sounds like a Pantanal version of the Loch Ness Monster, a hairy, 90-foot-long animal, half fish and half serpent, called *minhocão*. When *minhocão* prowls a river bottom, he is told, the resultant whirlpool is strong enough to pull a motorboat under.

Banks goes everywhere he can and talks to everybody. A gold miner tells him about the day he took out $6,800 worth of paydirt, with the help of illegal and highly dangerous mercury. Professors lament the harm to the land and wildlife inherent in the practices of the large farmers and ranchers who regularly burn the grass cover and let pesticides drain into the rivers. A Brazilian government official makes the case against outsiders telling Brazil how to manage the Amazon Basin: in Brazil, he says, nobody has done something like "what Exxon did in Alaska. France conducts nuclear tests in the South Pacific in open skies. The Japanese just killed 250 whales. . . . It's the United States and the First World rich countries that are ruining the environment."

Banks' tell-all modus literandi has the refreshing virtue of eschewing preachiness; everyone has his say with minimal editorializing, but it's clear that even an area as rich and remote as the Pantanal cannot indefinitely survive the careless greed and lax law enforcement (the area has been designated a National Heritage Region deserving special protection) that now prevail. Banks patrols with "forestry policemen" who use their high-tech equipment not against powerful landowners but on poor fishermen scuffling for a living. "Brazil has wonderful laws," a scientist tells him, "but nobody is interested. . . . everyone is so money hungry." The book's final scene is a chilling visit to a wildlife market outside of Rio de Janeiro where tropical birds suffocate in tiny cages, and endangered species are routinely offered for sale.

Wallace Stegner, prizewinning novelist and observer of American life, once referred to places like the Pantanal as part of a "geography of hope," untrammeled preserves whose existence we cherish although few of us will ever have the opportunity to visit them. Banks gives us a fine portrait of one glorious—and vulnerable—part of that geography.

Donald Dale Jackson, a freelancer, writes from the wilds of Connecticut.

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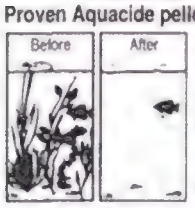

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Additional reading

Electric car (p. 34)

Why Wait for Detroit?, edited by Steve McCrea and Richard Minner, Electro Automotive (Felton, California), 1992

Electric Vehicle Progress (newsletter), Alexander Research & Communications (New York)

Electric Vehicle News (newsletter), Lew Gulick (Arlington, Virginia)

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Seattle Art Museum (p. 46)

Selected Works: Seattle Art Museum, Seattle Art Museum, 1991

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"Robert Venturi, Gentle Subverter of Modernism" by Paul Goldberger, *New York Times*, April 14, 1991

Vicki Hearne (p. 60)

Bandit: Dossier of a Dangerous Dog by Vicki Hearne, HarperCollins, 1991

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The Ethology of Predation by Eberhard Curio, Springer-Verlag (Berlin), 1976

Mexican artists (p. 86)

Out of the Volcano: Portraits of Contemporary Mexican Artists by Margaret Sayers Peden, photographs by Carole Patterson, Smithsonian Institution Press, 1991

A.S.W. Rosenbach (p. 106)

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Salem witch-hunt (p. 116)

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The Devil in the Shape of a Woman by Carol F. Karlsen, Norton, 1987

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Picture credits

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Smithsonian highlights

Planning a Smithsonian visit?

The new VHS video *Guide to the Smithsonian* is an excellent aid for previsit planning. For ordering information and the free Associates' Planning Packet, send a postcard to Associates' Reception Center, Smithsonian, Washington, D.C. 20560, or call (202) 357-2700. For hearing-impaired visitors, use TDD and call (202) 357-1729.

Begin your visit at the Smithsonian Information Center, located in the Castle. Hours are 9 A.M. to 5:30 P.M. daily.

Freer remains closed

The Freer Gallery of Art is closed until early 1993.

Extended hours

From Monday, April 13, through Friday, April 24, the National Air and Space Museum, National Museum of American History and National Museum of Natural History will be open from 9:30 A.M. to 7:30 P.M.

Washington Craft Show

The tenth annual Washington Craft Show, sponsored by the Women's Committee of the Smithsonian Associates, will be held April 23-26 in the Departmental Auditorium, 1301 Constitution Avenue, N.W., across from the National Museum of American History. One hundred artists will exhibit and sell work in a variety of media. There will be a daily admission fee. Call (202) 357-2700.

In conjunction with the Craft Show, the James Renwick Alliance will offer its annual spring forum, April 25-26. For information about the weekend events, call Shelley Gollust, (301) 229-2148.

The Contributing Membership

The Contributing Membership supports the Institution's work in education, research and collections programs. Partially tax-deductible contribution categories are: Supporting, $60 (available only to non-D.C. area residents); Donor, $125; Sponsoring, $300; Sustaining, $600; Patron, $1,200; James Smithson Society, $2,000. Contributing Members enjoy special benefits including Smithsonian publications, the engagement calendar and behind-the-scenes tours. For more information write to The Contributing Membership, 1100 Jefferson Drive, S.W., Smithsonian, Washington, D.C. 20560, or call (202) 357-1699.

Special April exhibits and events

National Museum of African Art
The Art of the Personal Object Permanent installation examines the forms and functions of utilitarian objects from Africa. See *Highlights continued*, page 140.
Purpose and Perfection: Pottery as a Woman's Art in Central Africa New permanent exhibition. See *Highlights continued*, page 140.

Arthur M. Sackler Gallery
When Kingship Descended from Heaven: Masterpieces of Mesopotamian Art from the Louvre (through August 9) Loan exhibition presents some of the world's most celebrated works of art.

National Museum of Natural History
Seeds of Change (through April 1, 1993) Exhibit explores the dramatic changes brought about by the exchange, begun 500 years ago, of five "seeds"—sugar, corn, the potato, the horse and disease—between the Old and New Worlds.

National Museum of American History
American Pressed Pattern Glass (April 30-October 31) Exhibition showcases 19th-century pressed glass tableware from the museum's collection.
First Ladies: Political Role and Public Image New permanent installation explores the various roles of our nation's First Ladies. Exhibit includes the Smithsonian's historic gown collection.

National Air and Space Museum
Star Trek (through September 7) Show marking the 25th anniversary of the famed television series examines the historical, political and cultural issues of the 1960s incorporated in its episodes.

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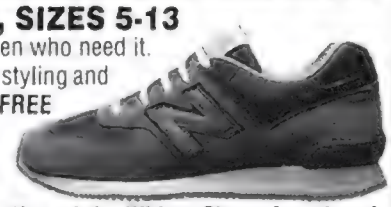

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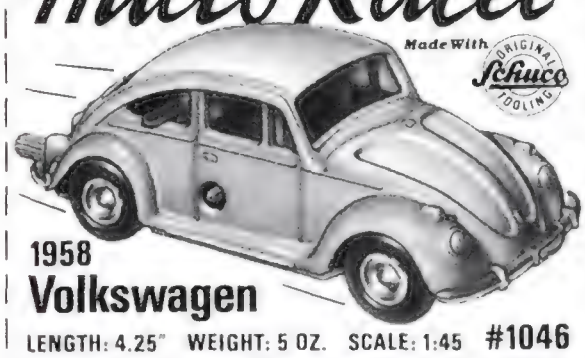

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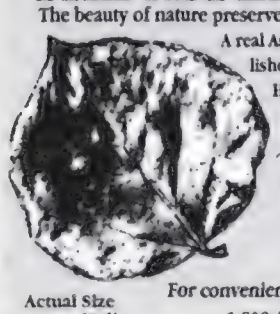

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Legend, Memory and the Great War in the Air Permanent installation looks at the reality of aviation in World War I.

National Museum of American Art
Elizabeth Layton: Drawing on Life (April 3-June 28) Drawings by the octogenarian artist cover themes from grandmothering to world hunger.
Between Home and Heaven: Contemporary American Landscape Photography (through June 28) A new look at the American landscape.

Renwick Gallery
John McQueen: The Language of Containment (through July 26) Exhibition of 43 baskets by one of America's most important craftsmen.

National Portrait Gallery
Arnold Newman's Americans (April 15-August 16) Images of major personalities of post-Depression America by the renowned photographer.
Poster Portraits (through August 16) Posters from the gallery's collection.

Hirshhorn Museum & Sculpture Garden
Martin Puryear (through May 10) A retrospective of the sculptor's work.
Directions—Francesc Torres (through May 3) Multimedia installation by the Spanish-born, New York-based artist.

Anacostia Museum
To Achieve These Rights: The Struggle for Equality and Self-Determination in the District of Columbia, 1791-1978 (through July 26) Exhibition examines the struggle by black people to secure equal rights in the nation's capital.

Cooper-Hewitt Museum (New York)
The Cooper-Hewitt Collections: A Design Resource (through August) Some 1,200 objects chronicle the history and collecting philosophy of one of the most important repositories of design.

National Museum of the American Indian (New York)
Weaving a Mayan Heritage: Clothing by Juana Cavanaugh (through July 12) Handmade woven textiles by Juana Cavanaugh, an Ixil Indian from Guatemala.

Exhibition catalogs

Catalogs available currently include:
Elizabeth Layton: Through the Looking Glass (paper, $16)
Arnold Newman's Americans (paper, $35; cloth, $60)

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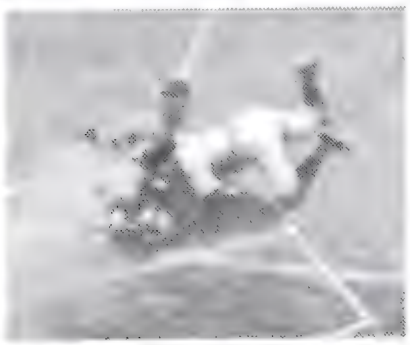

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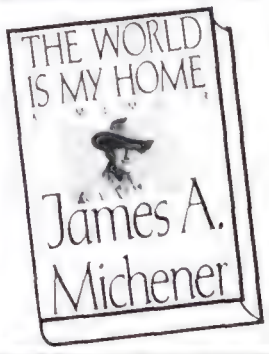

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Smithsonian on the air

The Buried Mirror: Reflections on Spain and the New World Landmark five-part television series premieres April 19 at 10 P.M. EST on the Discovery Channel. World-renowned author Carlos Fuentes reflects on the history and contributions of Hispanic culture. These one-hour programs will be aired consecutively at the same time each evening, April 19-23. Check local listings.

Smithsonian National Associates

The National Associate Program U.S. and International Events will visit Madison and Milwaukee, Wisconsin, and Albuquerque, New Mexico, this month. Events in Madison (April 8-12) will include creating a family cookbook. The Milwaukee program (April 8-12) will feature highlights of NASM. Albuquerque topics (April 23-26) will include folk art of the Southwest.

For further information, write or call U.S. and International Events Program, 490 L'Enfant Plaza, S.W., Suite 4210, Washington, D.C. 20560; (202) 287-3210.

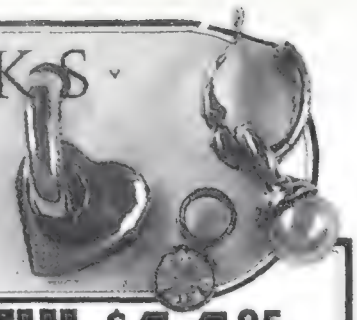
Resident Associate Program

To become a Resident Associate, or for fee and ticket information, call (202) 357-3030. April events include:
Carlos Fuentes: The Buried Mirror (April 16; 8 P.M.) Lecture by the famed novelist explores the wealth, variety and continuity of the Hispanic culture.
Eugenia Zukerman Presents "April in Paris" (April 15 and 29; 7:30 P.M.) Concert by the superstar flute virtuoso.

Smithsonian Institution Traveling Exhibition Service

SITES organizes and circulates exhibitions to cities throughout the United States and abroad. To sponsor a show in your community, write SITES, Smithsonian, Washington, D.C. 20560. Here are some April exhibits:
- Birmingham, Alabama (April 11-May 10) *Seeds of Change* (panel exhibition based on the NMNH show), Birmingham Public Library.
- Salem, Oregon (April 11-May 10) *Seeds of Change*, Oregon State Library.

ROCKS
London



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The artful forms of everyday life

Two permanent exhibitions celebrating the creativity of African artists who have made utilitarian objects of compelling beauty are now on view at the National Museum of African Art. The objects in these shows were made to fill specific functions, but each was also conceived to generate visual delight.

From pot lids, bowls and beer straws to drinking horns, hair combs and headrests, the utilitarian "props" of everyday life included in "The Art of the Personal Object" were created specifically for practical use. "Each object is a tangible example of the visual cultures of African societies and proof of the integration of esthetics and daily life in Africa," says Philip Ravenhill, the museum's chief curator and organizer of the exhibition. "The personal object is an affirmation of individual identity, history and existence."

The works in the exhibit date from the middle of the 19th to the middle of the 20th century and are principally from eastern and southern Africa. Skillfully crafted by men, they are made of wood, horn, ivory and fiber.

"Purpose and Perfection: Pottery as a Woman's Art in Central Africa" showcases an elegant collection of vessels—bottles, bowls, jars—life's containers. "It is a wedding of the useful and the beautiful," according to curator Andrea Nicolls. Pottery is one of the most ancient arts—a record of civilization. In Africa, it has generally been the domain of women. Although most of the pieces in the show date from the early 20th century, they represent an extension of longstanding pottery traditions. "The magnificent forms and surfaces of these vessels, hand-built by women, clearly demonstrate their artistry," says Nicolls.

The utilitarian art forms presented in these exhibitions are singular examples of both individual creativity and the creativity of African cultures. They are a tribute to the artists' vision and ingenuity and the work of their hands.
Diane M. Bolz

The design on this water bottle from Zaire was applied with natural pigment.

Small low chairs such as this are used throughout much of Côte d'Ivoire.

Wooden cup from Mozambique is elegant union of form, function.

Elaborate snuff containers are made of hard fruit shells and wire.

The stool is the most ubiquitous form of African furniture, the basic support for the body at rest. This group, from Kenya, Zaire, Zambia, Ghana, shows range of forms.

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The American Indian Heritage Foundation Museum proudly presents its first-ever collector plate by world-renowned Western artist Paul Calle.

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Only an artist of rare talent and vision could capture the mystery and drama of this centuries-old ceremony. Paul Calle, whose works are eagerly pursued by knowledgeable collectors of Western art, is such an artist.

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Domestic Study Tours

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Sojourn in Sedona (Arizona) *May 21-27*

Native Cultures of the Southwest *May 26-June 6 or August 26-September 5*

Grand Canyon Rafting *May 29-June 7 or August 21-30*

Chicago Architecture *June 17-21*

California's National Parks *June 20-28*

Frank Lloyd Wright's Wisconsin *June 21-26*

Alaska Cruise *June 27-July 4*

Alaska *July 9-21*

Railroading the Rockies *July 10-18 or August 7-15*

Pueblo Indians *July 11-19* Santa Fe.

Oregon *July 12-19* Natural history.

Colorado for Families *July 18-24*

The Old West: Black Hills to the Tetons *July 20-30*

Golden Age of Cowboys *July 21-30*

Nez Perce Trail Ride *August 8-16*

Waterton-Glacier *August 22-September 2*

Coast of Maine Cruise *August 23-September 2*

Civil War: Eastern Theater *September 4-14*

Olympic Park-Mt. Rainier *September 5-13*

Pacific Northwest-Columbia River Cruise *September 5-18*

Great Camps of Adirondacks *September 12-19*

Canadian Rockies *September 12-23* Hiking.

New York Theater *September 24-27*

Grand Canyon *September 24-27 or October 8-10*

Bryce, Zion and the North Rim *October 1-11*

Foreign Study Tours

Countryside Tours *May-October* Sojourns in France, England, Wales, Czechoslovakia, Italy, Switzerland, Germany and Mexico.

Copper Canyon (Mexico) *May 24-31*

NEW **Dutch Manor Houses and Gardens** *May 28-June 8*

NEW **Scotland's Highlands and Northern Isles** *May 29-June 14*

China *June-October* Several tours.

NEW **Lake District (England)** *June 1-11*

Pyrenees (France and Spain) *June 5-15*

Cotswold Walks (England) *June 11-22*

Inside Ireland *June 13-24*

Walks in the French Alps *June 14-27*

Northern Japan and Russia's Far East Cruise *June 16-July 2* For Contributing Members.

Walks in Switzerland *June 20-July 4*

Mongolia and Trans-Siberian Railroad *June 21-July 12*

NEW **Norway Fjords Cruise** *June 23-July 4*

Russia and Latvia by Train *June 27-July 14*

Sweden and Norway *June 28-July 11*

Montreal, Quebec, Ottawa *June 30-July 11*

NEW **8th Air Force (England)** *July 2-15 or September 2-15*

British Isles Cruise *July 5-21*

Scotland by Train *July 11-22*

Danube Cruise *July 19-August 5*

NEW **Walks in Japan** *July 24-August 7*

Abbotsford Air Show (Vancouver) *August 5-9*

Kenya Tented Safari *August 6-23*

Edinburgh Festival *August 9-19*

Iceland-Greenland Cruise *August 9-21*

NEW **Yorkshire for Families** *August 10-20*

Nova Scotia *August 16-27*

Elbe River Cruise (Germany) *August 16-27*

Switzerland by Train *August 20-September 1*

NEW **Estonia, Latvia, Lithuania** *August 25-September 7*

Zimbabwe-Botswana Safari *August 27-September 13*

NEW **French Waterways** *August 31-September 11*

Medieval Jewels of the Midi (France) *September 2-14*

Hungary *September 3-14*

Indonesia *September 3-24*

Environmental Cruise (Europe) *September 9-22*

Byzantium Cruise *September 9-26*

NEW **Samarkand to Istanbul** *September 9-27*

NEW **United Germany** *September 10-24*

Southern Italy and Sicily *September 11-26*

English Canals *September 12-21*

Paradors of Spain *September 13-26*

Black Sea Cruise *September 23-October 5*

Himalayan Kingdoms *October 2-20*

Soviet Union Transformed *October 7-17*

NEW **Japan Arts** *October 7-17*

NEW **Battlefields of France and Belgium** *October 9-22*

NEW **Atlantic Crossing** *October 18-November 5* Aboard the *Sea Cloud*.

Write to Smithsonian National Associate Program, Washington, DC 20560 or call (202) 357-4700 for tour and seminar brochures.

SMITHSONIAN-STYLE

Seminars

Join top scholars for classroom study and tours. Courses are held in Washington, D.C. unless otherwise indicated.

Greece *May 22-June 4*

Interior Design (New York) *May 31-June 3*

Creative Writing (Annapolis) *June 7-11 or September 20-24*

Judaic Art *June 8-11*

Paris *June 19-30*

Kenya *June 29-July 16*

Arctic Culture-Ecology (Alaska) *July 7-11*

Bali *July 8-22*

Oxford *September 12-26*

Istanbul *September 14-27*

Florence *September 15-30*

Riviera *September 18-30*

Research Expeditions

Contribute your talent and financial resources to Smithsonian research. Work with curators at museums or in the field.

Worland, Wyoming *June 17-30 or July 12-25* Excavate fossilized plants.

Pierce, Idaho *July 2-11* Interview loggers.

Costa Rica *July 11-23* Monitor a volcano.

Saltville, Virginia *July 12-25 or July 26-August 8* Excavate human, animal, remains.

Washington, D.C. *July 19-25* Work on a videodisk archival project.

Washington, D.C. *July 19-August 1* Archive documents at the Air and Space Museum.

Edgewater, Maryland *August 2-8 or August 9-15* Study environment and plant life.

Hardin, Montana *August 12-18* Document the annual Crow Fair.

Front Royal, Virginia *September 12-26* Wildlife research in the Shenandoah Valley.

(202) 287-3210 for expedition brochures.

Stained Glass and Pewter Plate 10" Diameter

RESURRECTION

Created by Tiffany

Louis Comfort Tiffany created the Resurrection window for the 1900 Paris Exposition, where it was viewed and admired by visitors from throughout the world. Now The Stained Glass Guild has adapted his work for the inspiring Resurrection Stained Glass and Pewter Plate, an issue of remarkable beauty and rare collector's value.

In the foreground stands the open tomb, surrounded by luxurious red poppies, the symbols of sleep. Luminous lilies, symbols of resurrection, are rising from the tomb. Patches of brilliant color provide the transition to the risen figure of Christ with arms outstretched, His head surrounded by a golden glow.

Illuminated by daylight, lamp or candle, the Resurrection Stained Glass Plate can be a continual reminder of the belief that Jesus Christ is "The Resurrection and the Life" and that those who follow His Word will join Him in heaven.

Handcrafted in the U.S.A.

Artists of The Stained Glass Guild, makers of stained glass for America's museums and cathedrals, are reproducing the window using the same techniques perfected in the middle ages. They apply 16 separate transparent enamels to thick, richly-textured glass. They fire the glass in a kiln for several hours, permanently fusing the colors into the glass. The colors will never fade. Skilled pewtersmiths then surround the glass with polished lead-free pewter.

I wish to reserve ___ Resurrection Stained Glass Plate(s) by Tiffany (limit: 2 per collector), handcrafted of stained glass and pewter. $160 each. My $40 deposit for each plate is enclosed. I will pay the balance in 3 monthly installments of $40 each per plate. Thirty day return privilege.

☐ Check enclosed for $_____.

☐ Charge payment of $ _____ to:

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By Bailey White

My five-year plan for a garden from a can

About six years ago, like so many romantic gardening fools, I fell for it. The wildflower meadow. I don't know whether it was the pictures on the seed packets or the vision I had of myself, dressed all in white, strolling through an endless vista of poppies and daisies. "A garden in a can," the seed catalogs said. The pictures showed a scene of rolling hills and dales, an area about the size of Georgia and Alabama combined, covered with billowing drifts of lupine and phlox.

But I wasn't born yesterday. I had been tricked by those pictures before. I come from down South, where vegetation does not know its place. Honeysuckle can work through cracks in your walls and strangle you while you sleep. Kudzu can completely shroud a house and a car in one growing season. Wisteria can lift a building off its foundation. Even the more responsible plant catalogs, in their offers of wildflower seed mixes for various regions of the country, admit, "We have not been able to develop a mixture suitable for Zone 9." I knew it wouldn't be easy.

It's hard to squash a romantic. I made a plan. I would prepare my ground, about a half-acre, and plant the wildflowers in rows. I would keep the weeds out for five years by cultivating between the rows with a push plow and a hoe, and weeding by hand within each row. Then the garden would be on its own. The wildflowers would spread, taking up the spaces between the rows, and I would get out my white dress and begin my leisurely strolls.

My garden's first spring: the seeds arrived. I planted by hand. The rows, neatly set out with stakes and string, seemed endless. I crawled up and down and up and down every afternoon, examining each seedling as it sprouted. Was this spurge or bouncing Bet? Redroot pigweed or showy primrose? I recognized most of the common weeds and tweaked them out. After every rain I hoed between the rows. My hands got hard and callused.

The first summer, my annual plants bloomed. The coreopsis tinctoria was spectacular, a glowing yellow, and the cosmos was shoulder-high. Its lavender petals brushed my face as I scritched and scritched up and down each row. I loved the sight of the clean brown earth stretching away from the blade of my hoe. On my hands and knees, I weeded between plants. The smell down there was nice, damp ground and bruised artemisia. I developed a gardener's stoop and a horticulturist's squint.

The first winter, I could relax only a little. Bermuda grass can establish itself during a winter and get away from you the following spring. So every evening at dusk, I would stalk up and down my garden like a demented wraith, peering at the ground for each loathed blue-green blade. At night I would lie in my bed, under the quilt, listening to the wind outside, and pinching and sniffing the little bunches of flowers I had harvested and dried in July. I dreamed of that summer, only four years away now, when the garden would be finished. My white dress would be linen, I decided.

The second summer was very fine. Some of the annuals had reseeded, and the perennials and biennials bloomed for the first time. Every afternoon, wearing a wide straw hat and pouring sweat, I violently hoed the perimeter of my garden. I wore out my first hoe that year with sharpening the blade, and the handles of my cultivator became as smooth as ivory.

During the third and fourth years the rows began to close in. There were great irregular patches of gaillardia spanning several rows, with Queen Anne's lace and moss verbena weaving themselves among clumps of black-eyed Susans. When I stood up to ease my back and looked across the garden, I could see that it was truly as beautiful as the picture in the catalog. I wiped the sweat out of my eyes and washed my face in the watering can. My white linen dress would have lace.

The fifth summer, I had a problem with thistles. I wore gloves to take them out, and every time I pulled a thistle, I transplanted a wildflower in its place. By the end of that summer, there was not a spot of bare ground.

That winter I bought the linen and the lace and sewed my white dress.

In March I went out to the garden. The linaria was the first thing to bloom. I knew it would be. I knew that a week later the verbena would show up. Then the Shasta daisies and the gaillardia, a clump here, here and here. I knew exactly how it would be. I knew the name of every plant. I could recognize each one even before it got its true leaves. I sighted down the length of the garden. There was no trace of the neat rows I had worked on all those years. My garden was complete.

I walked back to the house. I looked at my soft, limp hands. I looked at my white linen dress with lace. It seemed like the stupidest thing I had ever thought up. "The fact is," I said to myself, "I want something to hoe."

I've started reading about Intensive Gardening. It involves double-digging and raised beds. Every season you pull out the old plants and put in new ones. It's a garden that never gets finished.

The white dress? I gave it to my sister.

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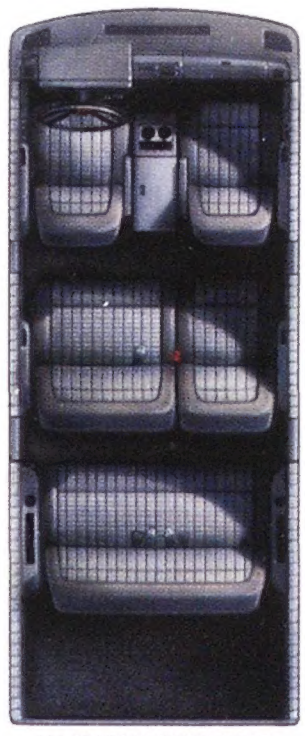

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